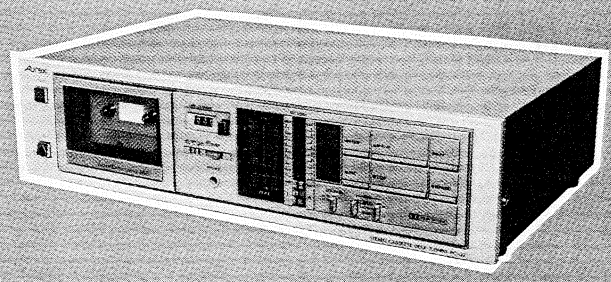
# TOSHIBA

## STEREO CASSETTE DECK

# PC-G2,PC-G2T



## SPECIFICATIONS

| | |
|---|---|
| **Heads.** | Record/playback AP head<br>Erase AF (2-gap ferrite) head |
| **Drive System:** | 2-motor IC logic control |
| **Motors:** | DC servo motor for capstan drive<br>DC motor for reel drive |
| **Tape Speed:** | 4.8 cm/sec. |
| **Wow & Flutter:** | 0.045% WRMS, ±0.17% DIN |
| **Fast Forward and Rewind Time:** | Approx. 70 sec. (C-60 tape) |
| **Frequency Response:** | 20 – 18,000 Hz with metal tape and –20 dB input<br>20 – 16,000 Hz with chrome position tape and –20 dB input<br>20 – 15,000 Hz with normal tape and –20 dB input |
| **SN Ratio:** | 58 dB (peak level, WTD, chrome position tape) |
| **Total Distortion:** | 0.8% (400 Hz, 0 dB chrome position tape) |
| **Bias Frequency:** | 85 kHz |
| **Input Terminals:** | MIC: 0.25mV (600 ohm – 10k ohm)<br>LINE: 70mV (50k ohm) |
| **Output Terminals:** | LINE: 0.4V (50k ohm)<br>Headphones: 0.1mW (8 ohm) |
| **Power Supply:** | AC 220V ∿ 50 Hz (TE, TD)<br>AC 240V ∿ 50 Hz (TU, AY)<br>AC 110 – 127/220 – 240V ∿ 50/60 Hz (VF)<br>AC 120V ∿ 60 Hz (TA, TC) |
| **Major Dimensions:** | 420(W) x 110(H) x 270(D)mm (including front panel knobs etc. and rubber supports) |
| **Weight:** | 3.9 kg |

Specifications are subject to change without notice.

G2: TE, TD, TU, AY, VF, TA, TC G2T: TE, TU, AY

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# 1. FEATURES

- IC logic feather-touch switches for soft fingertip operations.
- Remote control jacks for remote control operation from the comfort of a lounge chair (when optional remote control unit connected).
- Dolby NR for elimination of irritating "tape hiss".
- 3-position tape selector including metal tape position.
- Capacity for unattended recording and morning alarm playback.
- Soft eject mechanism for smooth ejection of tapes.
- Extra large LED digital peak meter.
- Sliding type recording volume control for simple settings.
- Main tape mode control buttons (PLAY, REC and PAUSE) designed to light up when pressed, thereby simplifying operating procedures.
- Performance further improved by dual-motor system for independent capstan and reel drive.

DOLBY SYSTEM

* Noise Reduction System is manufactured under license from Dolby Laboratories.
"DOLBY" and the Double-D symbol are Trademarks of Dolby Laboratories Inc.

# 2. BLOCK DIAGRAM

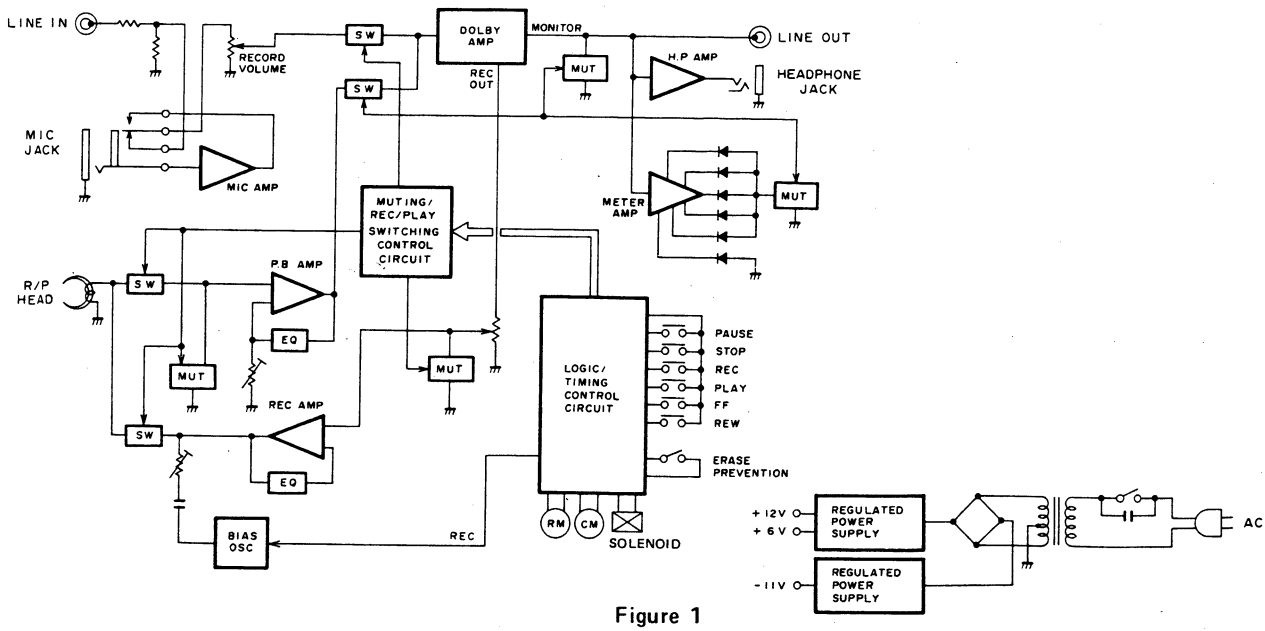



Figure 1

# 3. OPERATING CONTROLS

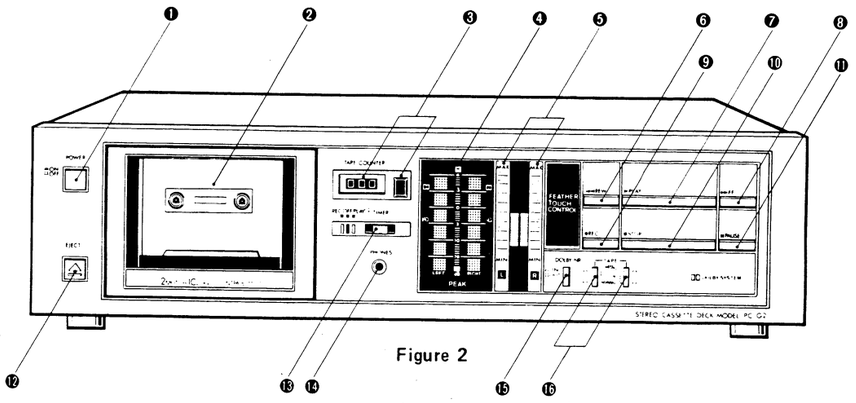


Figure 2

❶ **POWER Switch**

❷ **Cassette Compartment Door**

❸ **TAPE COUNTER and Reset Button**

❹ **Peak Level Meters**

❺ **Record Level Adjustment Control**
Adjust the recording level for line and mic inputs with this control (<R> for right channel, <L> for left channel).

❻ **[◀◀REW] Rewind Button**

❼ **[▶PLAY] Play Button**

❽ **[▶▶FF] Fast Forward Button**

❾ **[●REC] Record Button**
Recording mode is started by pressing this button. Note, however, that the deck cannot be put into recording mode if there is no tape loaded in the cassette compartment, or if the cassette tape erasure prevention tabs have been broken off.

❿ **[■STOP] Stop Button**

⓫ **[II PAUSE] Pause Button**

⓬ **[⏏EJECT] Eject Button**

⓭ **[TIMER] Timer Standby Switch**
By using an optional audio timer unit, unattended recording and morning alarm playback are possible.

⓮ **[PHONES] Headphones Jack**
Plug in a pair of headphones for quiet private listening.

⓯ **DOLBY* NR Switch**
Push this switch for Dolby NR recording and for playback of Dolby encoded tapes. Tape hiss in the mid and high frequency regions is suppressed.
* Noise reduction system manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

⓰ **TAPE Selector Switch**
Switch to the position corresponding to the type of tape being used.

| | [TAPE] Switch | |
|---|---|---|
| | Left | Right |
| Metal Tape | ▭ | ▭ |
| Chrome Position Tape | ▭ | ▭ |
| Normal Tape | ▭ | ▭ |

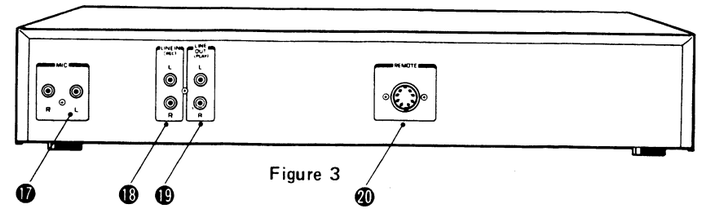


Figure 3

⓱ **Microphone Jacks**
For live microphone recording, plug in the microphones to these rear panel jacks (L—left channel, R—right channel).

⓲ **LINE IN Recording Terminals**
Connect to the REC OUT terminals on the rear panel of your stereo amplifier.

⓳ **LINE OUT Playback Terminals**
Connect to the PLAY IN terminals on the rear panel of your stereo amplifier.

⓴ **REMOTE CONTROL Connector**
The RM-20S remote control unit may be connected here for remote control purposes.

**VF MODEL**

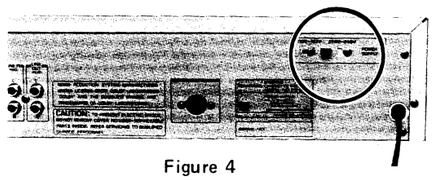


Figure 4

**TD MODEL**

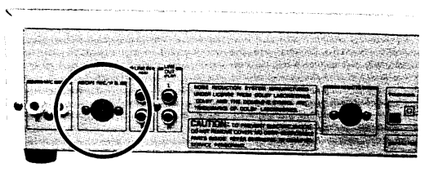


Figure 5

Recording

## ■ Recording from Phonograph Records or Tuner

**Note:** Make sure that the TIMER standby switch is in the OFF position.

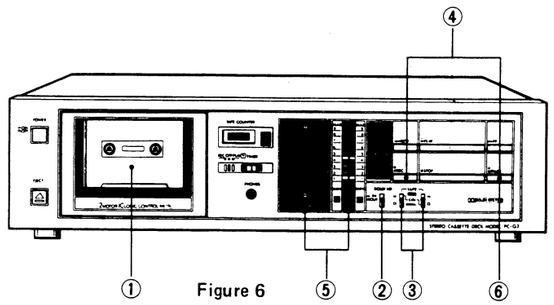


Figure 6

① Place a cassette tape in the cassette compartment.
② Select the DOLBY NR switch.
③ Set the TAPE selector switch to the position corresponding to the type of tape.
④ After first pressing the pause button [II PAUSE], press the record button [● REC].
⑤ Use the peak level meters and the record level adjustment control to adjust the input level to the best recording level.
⑥ Press the [II PAUSE] button a second time to commence recording.

## ■ Stereo Microphone Recording (Live Recording)

Plug a pair of microphones into the microphone jacks in the rear panel, and proceed according to the recording method described above.

# 4. OPERATING INSTRUCTIONS

## ■ Recording Level Adjustment

Generally, the type of tape used and the recording level setting will effect the recording frequency response. For example, the frequency response of metal tapes (particularly in middle and high frequency regions) is considerably better than normal tapes at the same level setting.
Furthermore, the recording/playback frequency response is also improved by setting the recording level at somewhat lower levels for the same tape.
When the tape selector is switched to the chrome position, optimum recording level will be indicated by the top yellow indicator flashing on now and again during the recording. When switched to the normal or metal tape positions, the optimum levels will be a little lower and a little higher respectively. It is recommended, however, that some test recording be done first to find the most suitable recording levels.

## ■ Playback

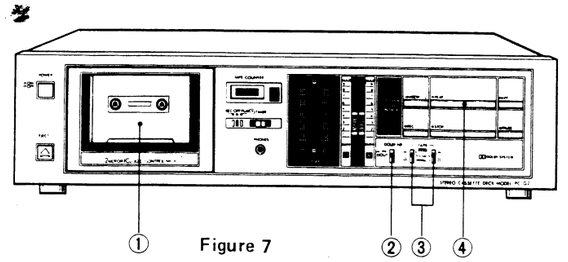


Figure 7

① Place the desired cassette tape in the cassette compartment.
② Select the DOLBY NR switch.
③ Set the TAPE selector switch to the position which corresponds to the type of tape.
④ Press the play button [▶PLAY].

**Note:** Check that the TIMER standby switch is in the OFF position.

PC-G2
PC-G2T

# 5. DISASSEMBLY INSTRUCTIONS

### TOP COVER REMOVAL

1. Remove two screws Ⓐ (3$\phi$ x 12mm) from each side of the top cover. (See Figure 8).
2. Remove two screws Ⓑ (3$\phi$ x 8mm) from the rear side. (See Figure 9).
3. Lifting the top cover upward, pull it backwards and the top cover can be removed out.

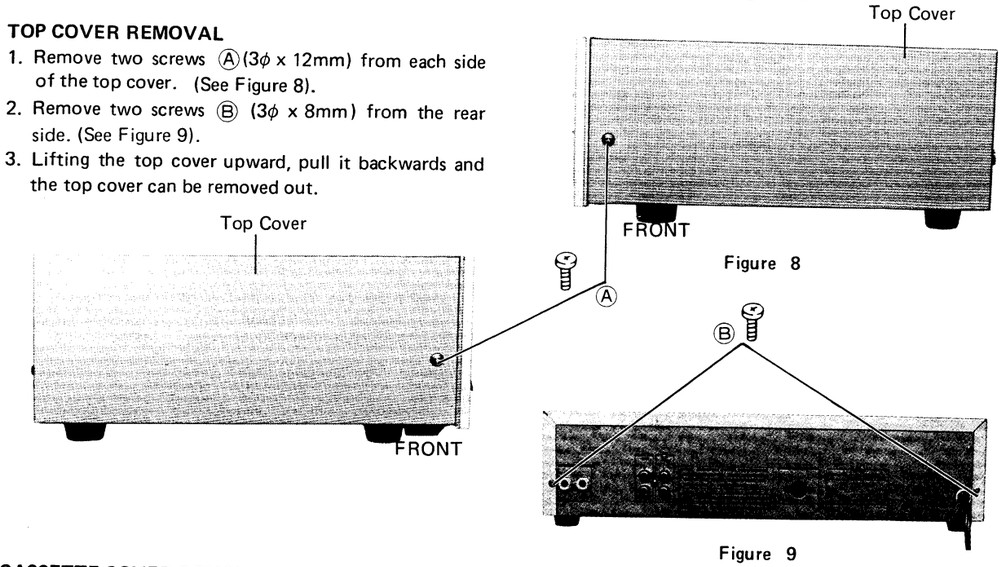



Figure 8

Figure 9

### CASSETTE COVER REMOVAL

1. Push the eject button to open the cassette cover.
2. Press the top and bottom of cassette cover with fingers, and take it upward in the direction of the arrow Ⓒ. (See Figure 10).
   Then the cassette cover can be removed from the unit.

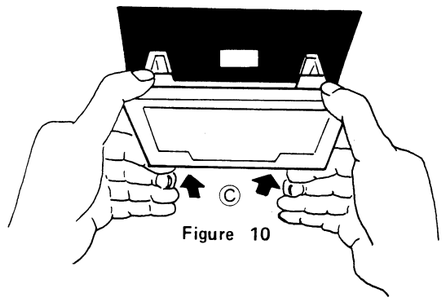



Figure 10

### FRONT PANEL ASSEMBLY REMOVAL

1. Remove the top cover.
2. Remove two screws (D) (3$\phi$ x 6mm) from both sides of the unit. (See Figure 11)
3. Remove three screws Ⓔ (3$\phi$ x 8mm) from the bottom side of the unit. (See Figure 12).
4. The front panel assembly can be removed from the unit.

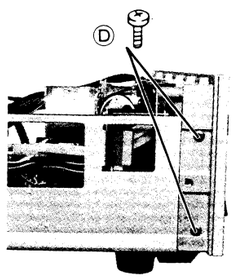



Figure 11

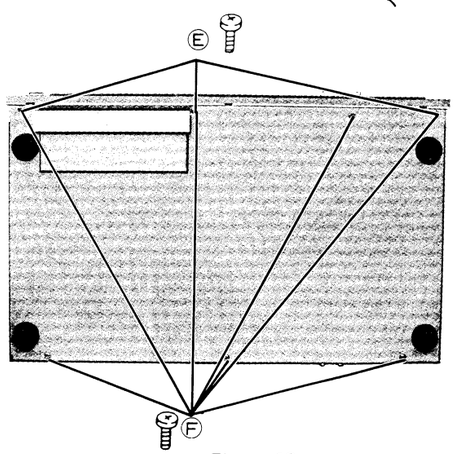



Figure 12

### BOTTOM PLATE REMOVAL

1. Remove seven screws (F) (3$\phi$ x 8mm) from the bottom side. (See Figure 12)



### VOLUME AND PEAK METER P.C. BOARD REMOVAL

1. Remove two screws Ⓖ (3$\phi$ x 25mm) from the front panel assembly. (See Figure 13).

### TIMER SWITCH P.C. BOARD AND HEADPHONE P.C. BOARD REMOVAL

1. Remove the volume P.C. Board and the peak meter P.C. Board as described above.
2. Remove two screws Ⓗ (2.6$\phi$ x 8mm) and the timer switch P.C. Board and the headphone P.C. Board can be removed together with the LED holder. Take care of reassembly. (See Figure 13)

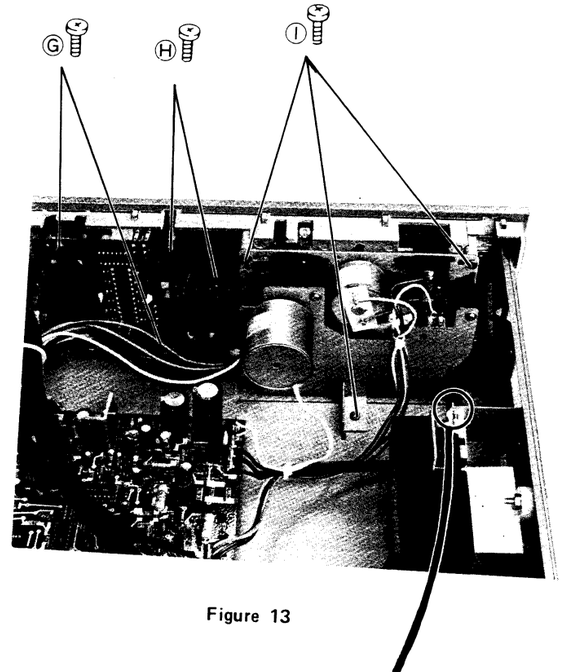
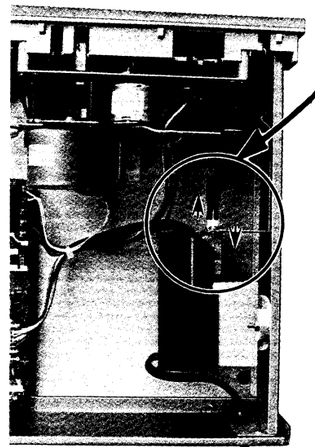



Figure 13

### MECHANISM ASSEMBLY REMOVAL

1. Push the eject button to open the cassette holder.
2. Remove three screws Ⓘ (3$\phi$ x8mm) and (3$\phi$ x6mm) from the front panel assembly. (See Figure 13).
3. Then the mechanism assembly can be removed from the front panel assembly.

**CAUTION:** The counter belt is taken off when the mechanism assembly is removed.
When reassembly, string the counter belt between the take-up reel and the counter pulley.



**CAUTION:** Before disassembling the mechanism assembly, take off the connecting part of power switch and push rod (Power) in the directions of arrows and lift up the push rod to remove it off.

# 6. TECHNICAL POINTS

## TC9143P IC Logic Control

### Outline

The two motor electronic control system with feather touch switching basically depends on the C.MOS. IC, TA9143P.

1. Input keys permit a non-lock system and change the level to "H" in a moment to gain a desired mode.
2. Direct change between all operational modes is possible and the mode passes through the stop mode if necessary.
3. Countermeasures have been taken for operational errors such as push of plural input keys at a time.
4. When the power is on, the mode is set up to stop.
5. Input terminals of TC9143P are organized as Input/Output.

### Maximum Rating

| Item | Symbol | Rating | Unit |
|---|---|---|---|
| Power Voltage | VDD | 12 | V |
| Input Voltage | VIN | −0.3 ∿ VDD + 0.3 | V |
| Power Consumption | PD | 300 | mW |
| Output Current | Iout | 30 | mA |
| Operational Temperature | Topr | −30 ∿ + 75 | °C |
| Preservative Temperature | Totg | −55 ∿ + 125 | °C |

### Pin Connection

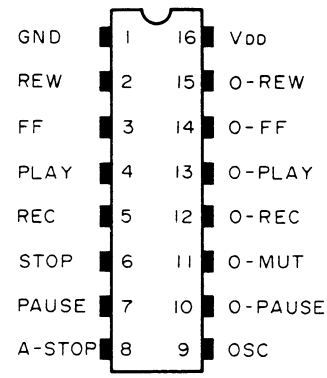



Figure 14

### Block Diagram

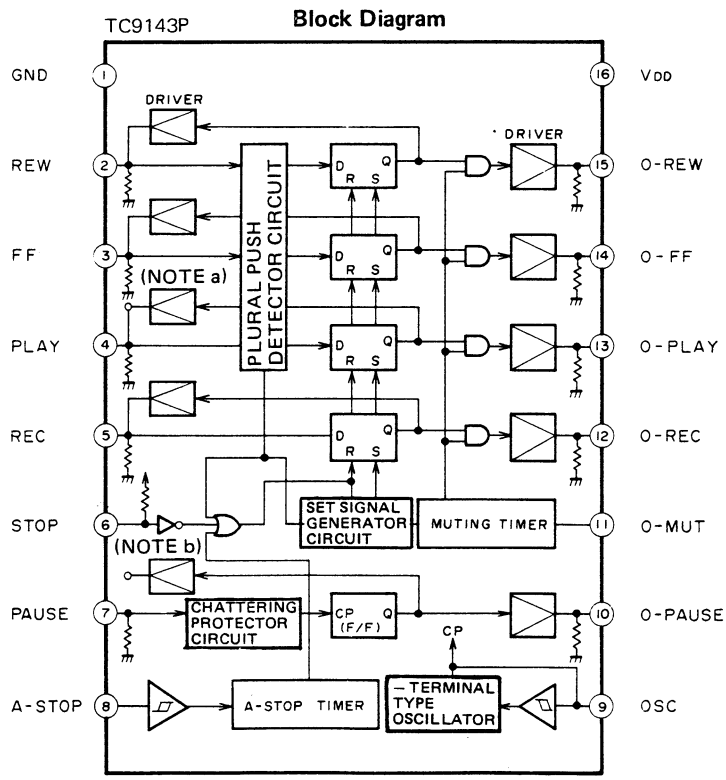
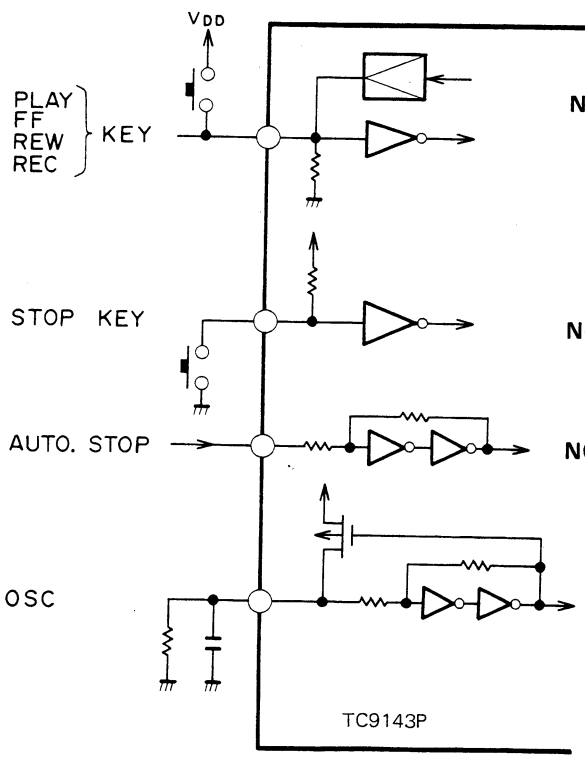



Figure 15

**Names and Functions of Pins**

| Pin NO. | Names | Functions | NOTE |
|---|---|---|---|
| 1 | GND | Ground terminal | – |
| 2 | REW | Input of tape rewind order | 1 |
| 3 | FF | Input of fast forward order of tape | 1 |
| 4 | PLAY | Input of tape playback and recording order by simultaneous push with REC | 1 |
| 5 | REC | Input of source monitor and recording order by simultaneous push with PLAY | 1 |
| 6 | STOP | Input of operational stop order | 2 |
| 7 | PAUSE | Input of temporary stop and release order of PLAY | – |
| 8 | A-STOP | Input terminal of stopping tape running | 3 |
| 9 | OSC | Input terminal for timing oscillator | 4 |
| 10 | O-PAUSE | Output at pause mode | – |
| 11 | O-MUTE | Output for a definite duration of time when changing the mode | – |
| 12 | O-REC | Output at recording mode | – |
| 13 | O-PLAY | Output at playback and recording modes | – |
| 14 | O-FF | Output at fast forward mode | – |
| 15 | O-REW | Output at rewind mode | – |
| 16 | VDD | Source terminal | – |




**NOTE 1:** This input terminal is Input/Output port. When the order is carried out to "H" input, it maintains "H" level at input terminal until the mode chages to another. (However, PAUSE input terminal does not maintain "H" level.)

**NOTE 2:** STOP input has the pull-up resistance inside and the order is carried out at "L" level.

**NOTE 3:** When the input pulse is gone off, the mode is set up to STOP.

**NOTE 4:** It decides frequency oscillation which sets up timing of chattering, muting, direct change and auto-stop.

Figure 16

## ■ Operational Timing

The operational timing inside is set up as it follows with frequency oscillation as fosc.

fosc ≒ 120 Hz

1. Chattering Prevention Timing

$$t \fallingdotseq \frac{2}{fosc} \fallingdotseq 15 \text{ msec.}$$

2. Muting Timing

$$T_1 \fallingdotseq \frac{8}{fosc} \fallingdotseq 70 \text{ msec.}$$

3. Direct Change/Auto Stop Timing

$$T_2 \fallingdotseq \frac{32}{fosc} \fallingdotseq 260 \text{ msec.}$$

4. Auto-Stop Detecting Timing

$$T_3 \fallingdotseq \frac{64}{fosc} \fallingdotseq 500 \text{ msec.}$$

## ■ Operational Timing toward Key Input of Each Output Terminal

(a) Operation of Muting Timer (0-MUT Terminal)

When the mode change is conveyed from the key input, the muting timer cuts off the output from the audio amplifier for a definite duration of time and erases pop noise that generates when changing the mode.

This time length lasts for about 70 milli-seconds for operation from the stop mode and about 330 milli-seconds for direct change operation. (However, since it takes 0.4 second for auto-stop, it takes 0.1 second for muting.)

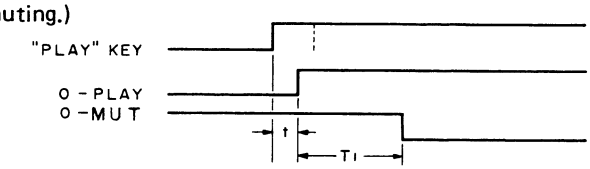



Figure 17

(b) Mode Change from except Stop Mode (Direct Change)

When changing the mode directly, the stop mode automatically lasts for about 260 milli-seconds in order to protect the tape.

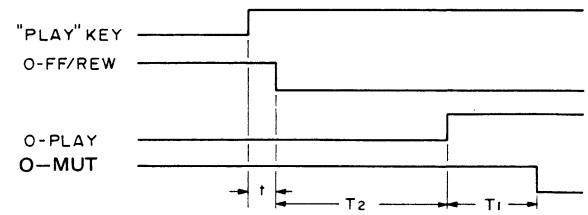



Figure 18

(c) Auto-Stop Operation

When the detector signal of reel stand revolution finishes at point (a), the ouput of PLAY/FF/REW changes to the stop mode at point (b) after $T_3$ of 500 msec.

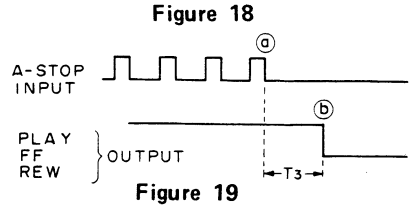



Figure 19

(d) Initializing with Power On

With the power on, the level of STOP input terminal of IC TC9143P is changed to "L" during T of the charging constant by R603 and C602, and maintains the stop mode when the circuit becomes stable, the terminal accepts the other input key. With the power off, the terminal quickly discharges through D601 and the mode changes to stop.

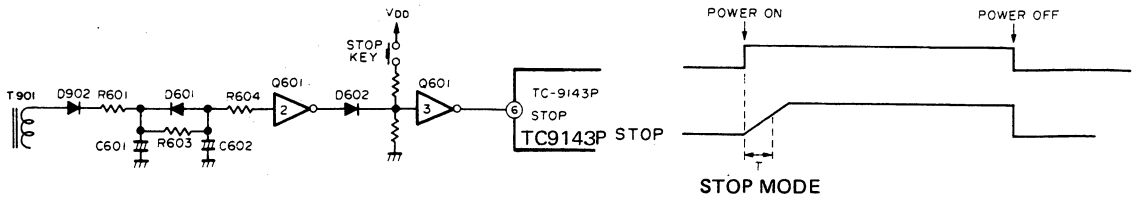



Figure 20

■ **Deck Mechanism and Logic Control System**

The head chassis of the deck moves with the inertia of the flywheel. The relation of mechanism with the logic control is as follows.

(1) The key input activates the logic IC to gain the output.

(2) The solenoid operates the cam to activate the inertia of the flywheel which is conveyed to the head chassis and consequently the head comes into contact with the tape. It takes about 300 msec.

(3) After 350 msec., the reel motor revolves to take up the tape.

(4) After 500 msec., the muting is taken off to start recording or playing back.

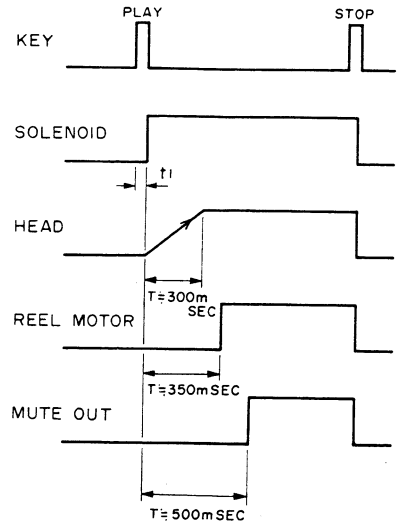



Figure 21

# 7. EXPLANATION OF LOGIC CIRUIT OPERATION

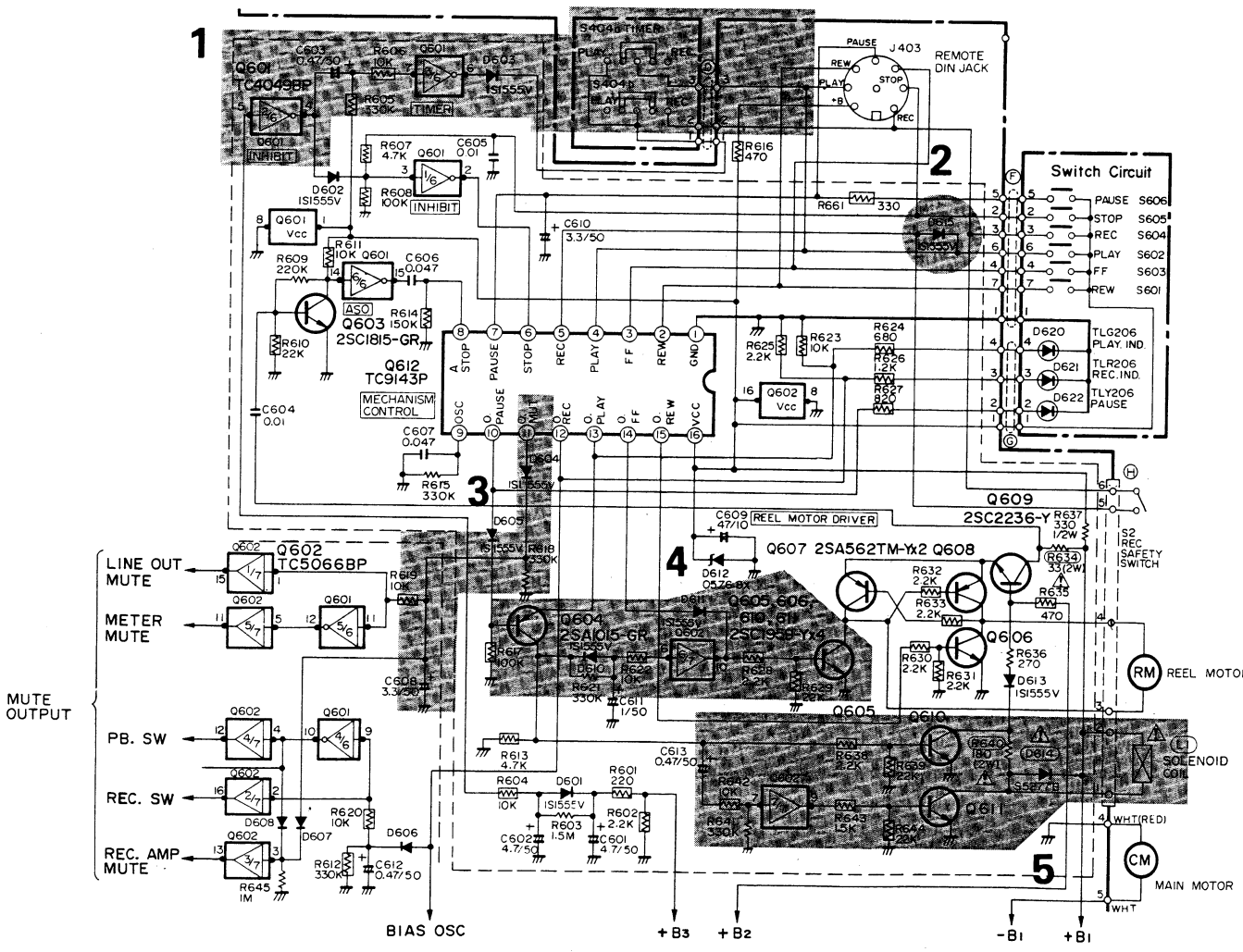



Figure 22

■ **Deck Mechanism and Logic Control System**

The head chassis of the deck moves with the inertia of the flywheel. The relation of mechanism with the logic control is as follows.

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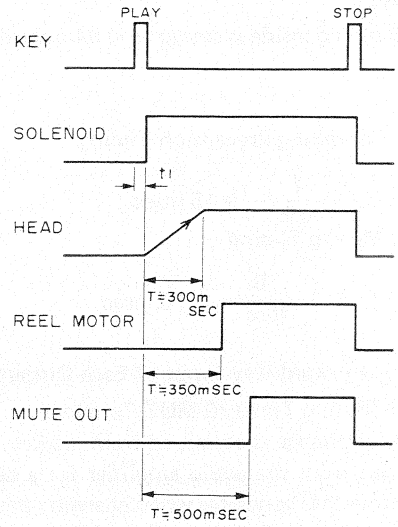



Figure 21

# 7. EXPLANATION OF LOGIC CIRUIT OPERATION

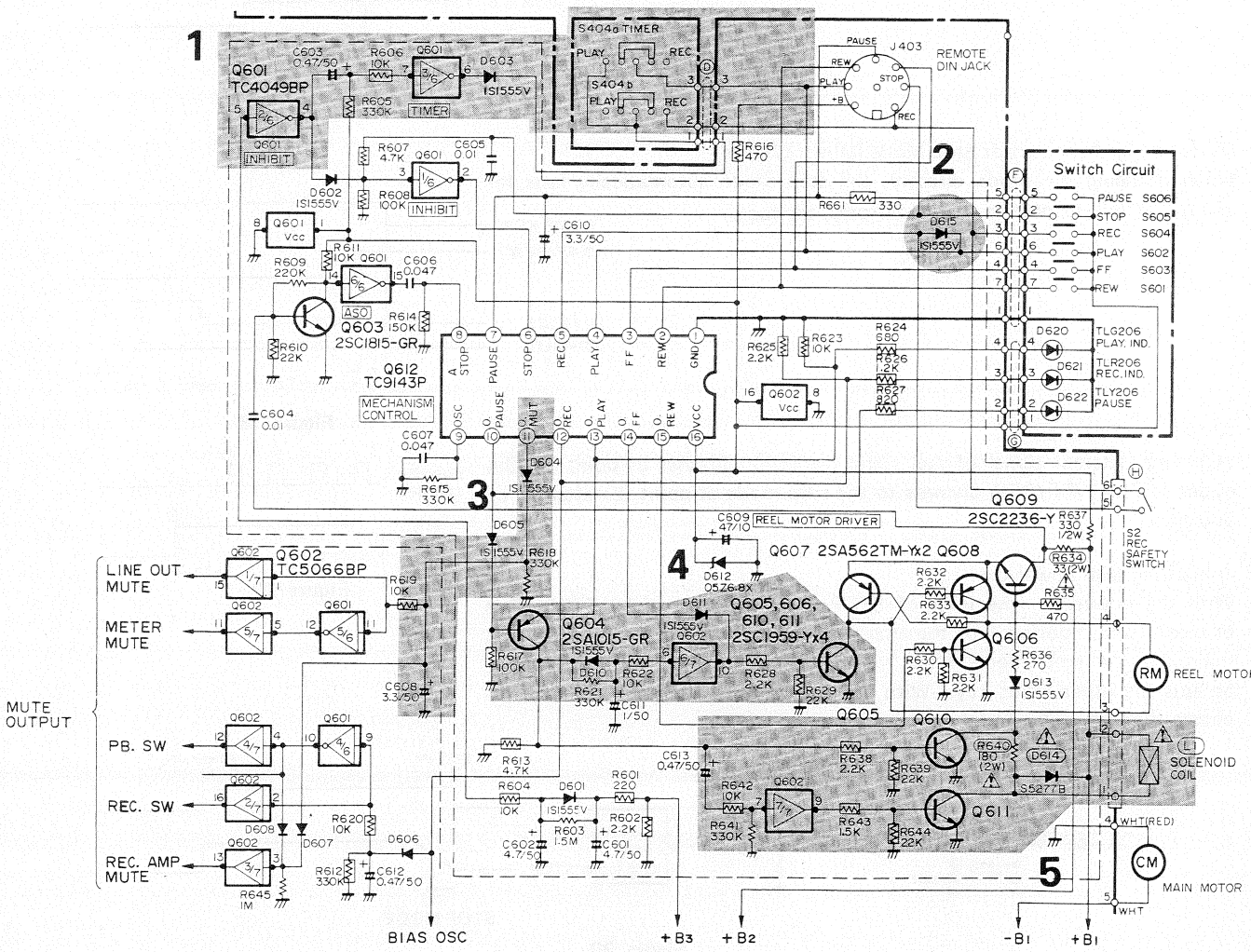



Figure 22

1. After the power is turned on, the electrical level at point B is delayed by time constant of R603 and C602. After T seconds when the level reaches the threshold electrical level of inverter Q601-2, the output C is gained, differentiated at C603, and conveys the order to PLAY or REC/PLAY of logic IC through inverter Q601-1. Delay time T is set up to about four seconds until the circuit of the set becomes stable.

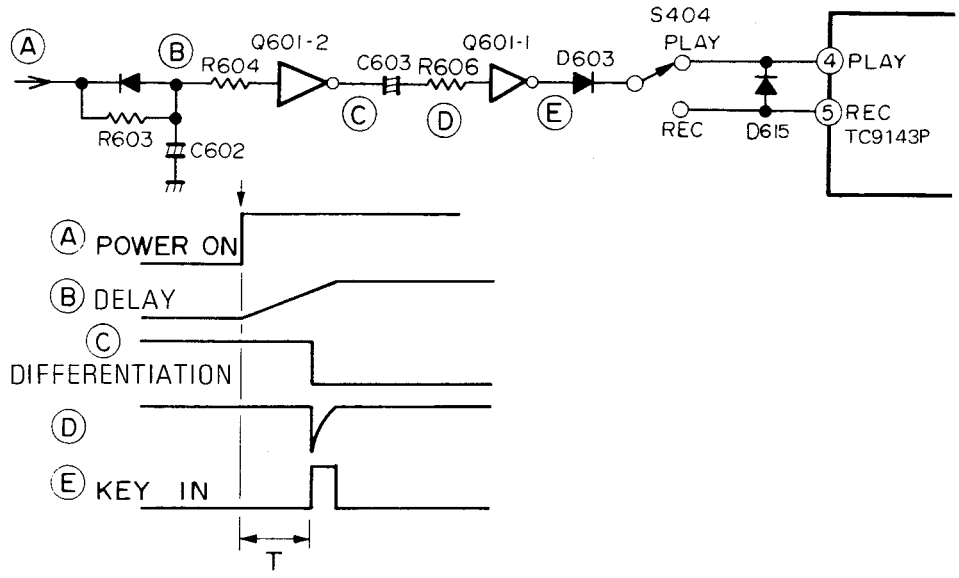
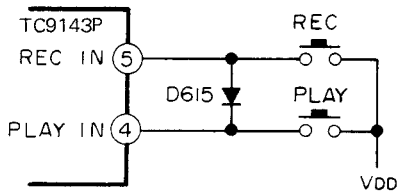



Figure 23

2. When operating the record key, the diode conveys the order to REC and PLAY simultaneously.




PLAY KEY → PLAY
REC KEY → REC & PLAY

Figure 24

3. When the tape starts to run stably after key input is given from PLAY and REC, the muting signal gains recording and playback signal.
At $T_2$ (about 260 milli-seconds) after pushing in the key, O-MUTE terminal of IC logic changes "L" from "H". The muting control signal of about 0.4 to 0.5 second is gained by time constant of R618 and C608.

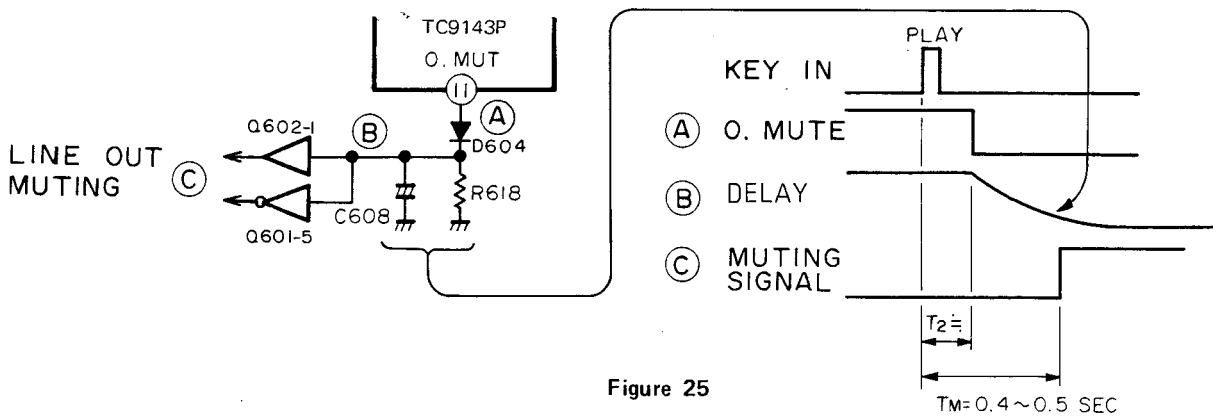



Figure 25

4. When pushing in the play key, O-PLAY output Ⓐ of IC logic is gained. This signal operates the solenoid to contact the tape and the head with inertia of the flywheel. After completing this, the reel motor revolves to take up the tape. Delay time for this is about 0.3 second.

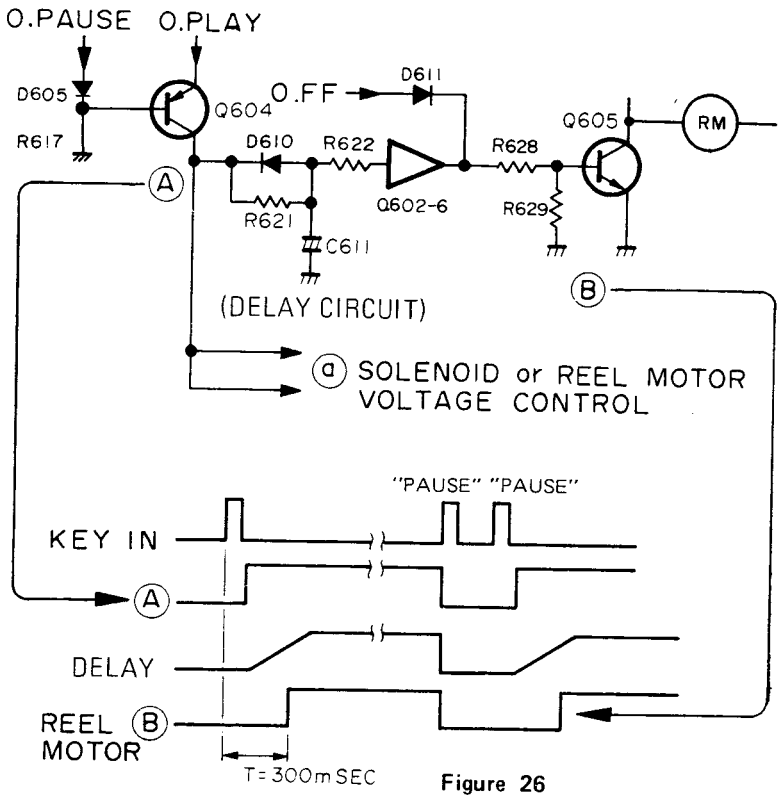



Figure 26

5. The solenoid drive restricts the current after the solenoid is completely pulled for electricity saving and firing protection. The drive signal of the solenoid is divided into Q610 and 611. At the beginning of the pull, the signal which was differentiated at C613 is given to Q611 and the large current is allowed to be flown. After the pull, R640 in series restricts the current to Q610.

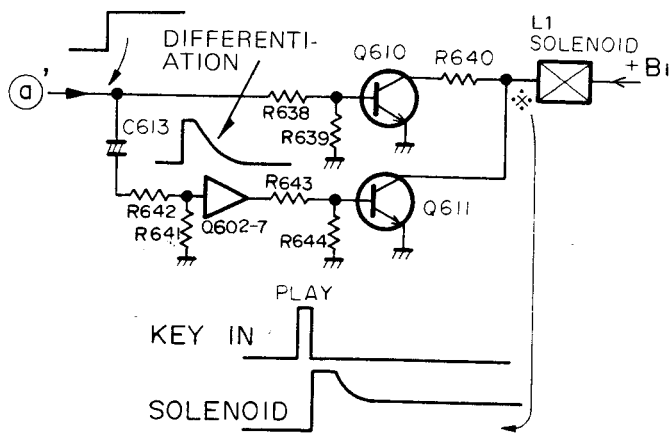



Figure 27

# 8. TECHNICAL ADJUSTMENTS

**Replacement & Adjustment of Solenoid**

(a) Take off the solder from the solenoid terminal.

(b) remove two screws (BID 2.6 x 4) holding the solenoid.

**CAUTION:**
- The tips of screws appear by shifting the lock slider (D) lightly to the left (toward outside) when removing the screws.
- These screws can be removed with a clock screwdriver or thin driver. If such drivers are unavailable, remove the eject lever and lock slider (D).

(c) Replace the solenoid to new one.

**CAUTION:** When reassembling, use the specified screws. Longer screws touch the coils in the solenoid and as a result, it brings a rare shorting of them. It may happen to cause not only the solenoid disorder but also a fire and a burning because of overheat of ground spring.

(d) Adjustment of Installation Position

The solenoid assembly can be moved a little forward or backward by holding the tip of solenoid pin and the rear side of it in current penetrating state.

In this state, set the clearance 0.1 to 0.3mm between the 3$\phi$ tip of solenoid lever and the square hole of mechansim chassis as shown in Figure 28.

- If the fingers do not touch the tip of the solenoid pin but the solenoid lever, the exact adjustment cannot be done because the state becomes like that when the lever is more moved than when the electric is going through the solenoid.
- If there is no space described above, the solenoid cannot be fully pulled when the electric is going through, does not maintain the play mode when changing from the stop mode, and the head slider goes back easily.

(e) Confirm that the operation of the solenoid lever and the head slider is normal after repeating to change the modes from stop to play with the electric current going through.

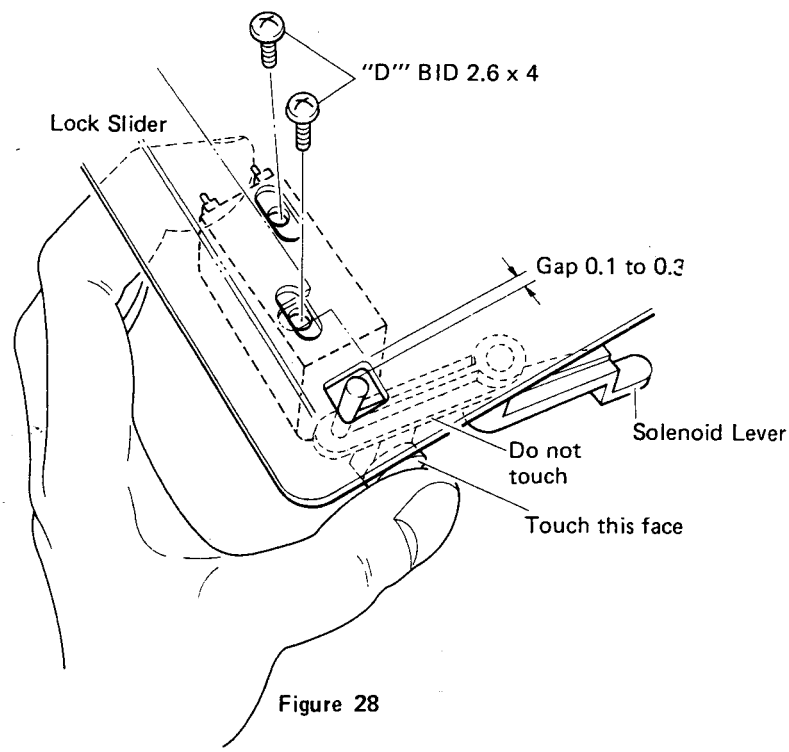



Figure 28

**Replacement & Adjustment of R/P Combination Head**

(a) Disconnect four head lead wires (single cored shield wire) and remove two head installation screws (BID 2$\phi$ x 5mm/ DT BID 2$\phi$ x 12mm).
(b) Replace the R/P head.
(c) Reassemble the head installation screws and the head lead wires.
(d) Confirm the head height as follows.
Set the Head azimuth adjustment screws so that the head becomes horizontal by measuring with the eyes and confirm that the mirror cassette (MC-09C) or C-90 cassette (cut off the shaded portions to remodel as shown in Figure 29) is not curled on play mode.

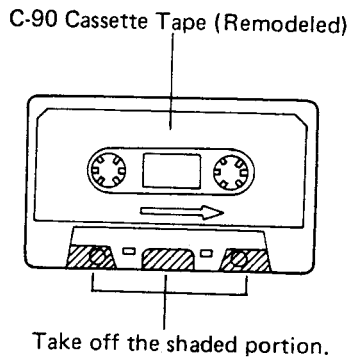


Figure 29

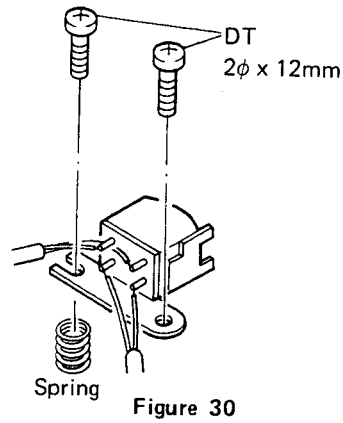


Figure 30

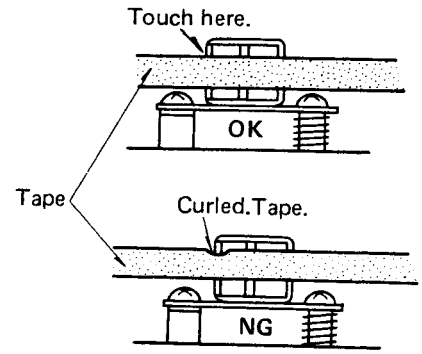


Figure 31

# 9. ELECTRICAL ADJUSTMENTS

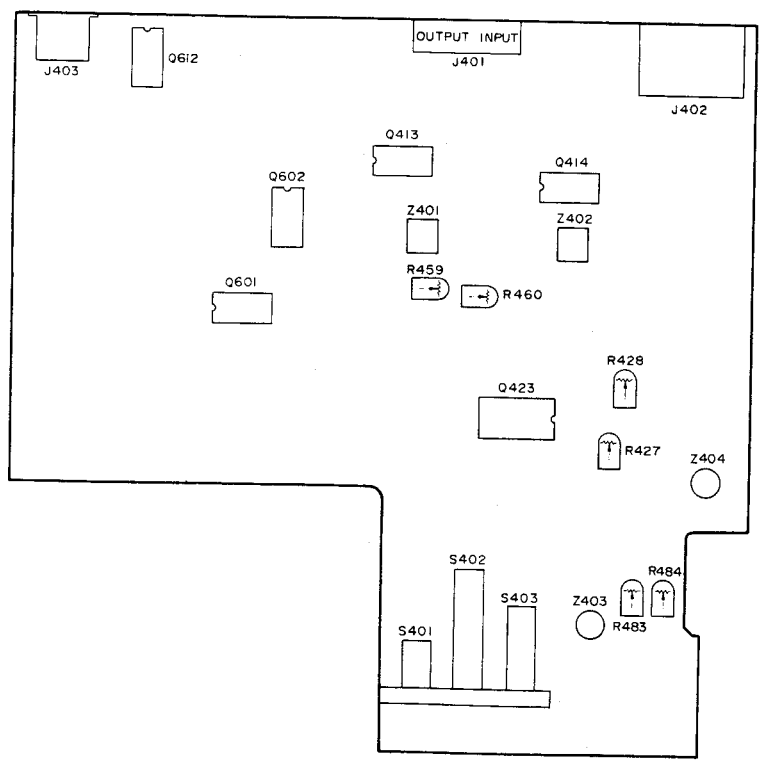
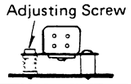



Figure 32

## ■ ADJUSTMENT PROCEDURES

| No. | Adjustment Item | Test Value | Test Tape | Volume Control REC | Switch Position TAPE | Switch Position NR | Switch Position INPUT | Adjustable Parts | Test Point | Input Frequency (ATT) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Head Azimuth Adjustment | Maximum | MTT-114 | ——— | NOR | OUT | LINE | Adjusting Screw  | LINE OUT | – | Apply a lock paint after adjustment. |
| 2 | Tape Speed | 3000 ±30 Hz | MTT-111 | ——— | NOR | OUT | LINE | Internal Semifixed VR of Motor | LINE OUT | – | Take-up beginning of tape. |
| 3 | Playback Sensitivity Adjustment | 500 ±10mV | MTT-150 | ——— | NOR | OUT | LINE | R427, 428 | LINE OUT | – | |
| 4 | Line Input Sensitivity Adjustment | 350 ±10mV | – | Adjustment | $CrO_2$ | OUT | LINE | REC-VR | LINE OUT | –20 dB | Do not vary REC-VR after adjustment. |
| 5 | R/P Frequency Adjustment | 0 ±1 dB | AC-512 | Adjustment | $CrO_2$ | OUT | LINE | R483, 484 | LINE OUT | 400 Hz 10 kHz –40 dB | Variation of 10 kHz to 400 Hz. |
| 6 | R/P Sensitivity Adjustment | Monitor Output | AC-512 | Adjustment | $CrO_2$ | OUT | LINE | R459, 460 | LINE OUT | 400 Hz, –20 dB | Monitor Output: 350 mV, (Reference Value) |

Measurement Condition
- Power Supply: TE/TD: 220V, TU/AY = 240V, VF = 110 – 127/220 – 240V TA, TC = 120V
- Input: 0 dB 1V rms • LINE IN (Input Impedance): 600 ohms
- LINE OUT (Load Impedance): 47K ohm • Test Point Load Impedance: Non Load.

## TEST EQUIPMENTS

1. VTVM (Vacuum Tube Voltmeter)
2. Signal Generator
3. Resistance Attenuator
4. Screwdriver
5. Test Tapes:
   MTT-111 (Speed 3 KHz – 5 dB)
   MTT-114 (Azimuth 10 KHz)
   MTT-150 (Dolby 400 Hz Modulation)
   AC-512 (Chrome Tape)

## TAPE HEAD HEIGHT ADJUSTMENT

**ADJUSTMENT**

1. Set in PLAY position.
   Adjust the height of the tape head to confirm that tape is not curled at the arrow point. See Figure 34.

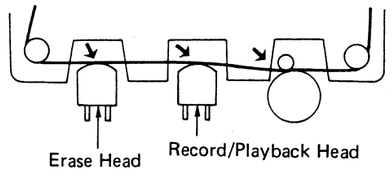



Figure 33

**(Playback Sensitivity Adjustment)**

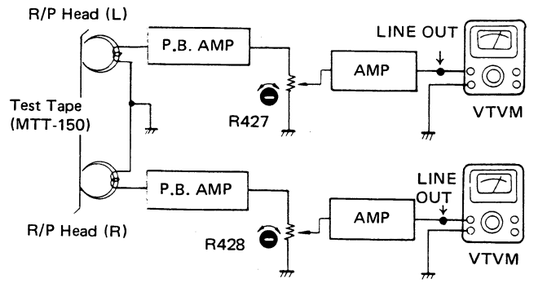



Figure 34

**(line Input Adjustment)**

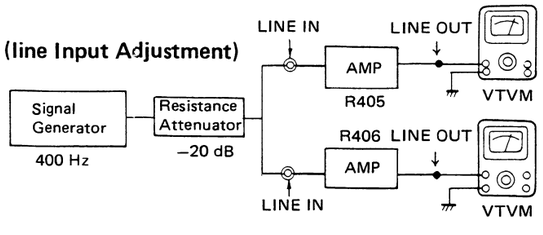



Figure 35

**(Rec/Play Frequency Characteristic Adjustment)**

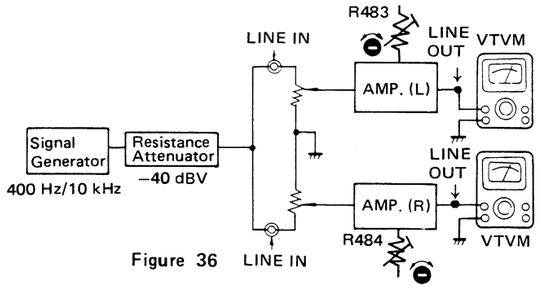



Figure 36

**(Rec/Play Sensitivity Adjustment)**

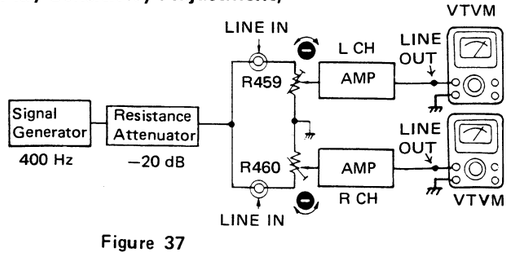



Figure 37

# 10. ELECTRICAL PARTS LOCATIONS

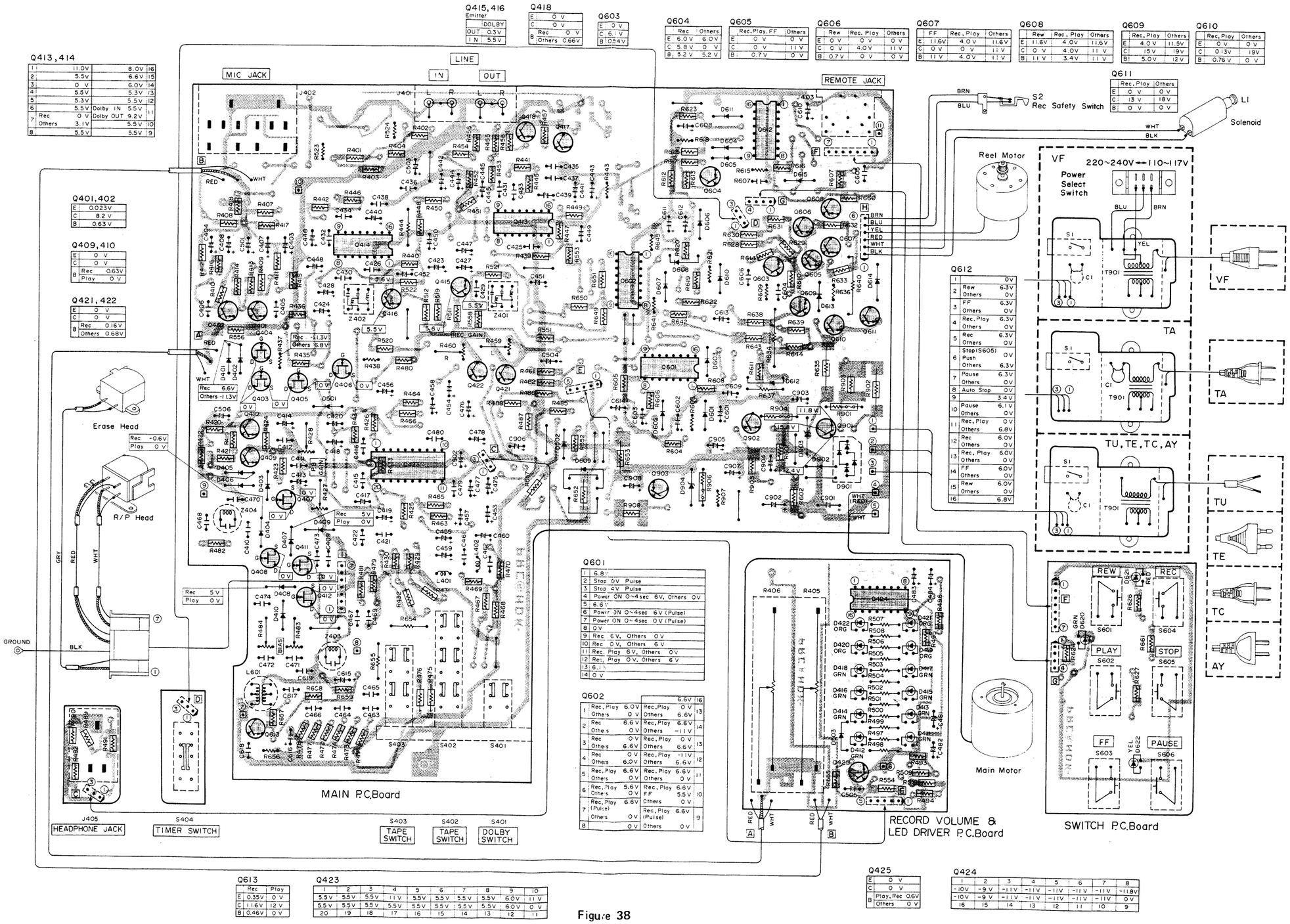
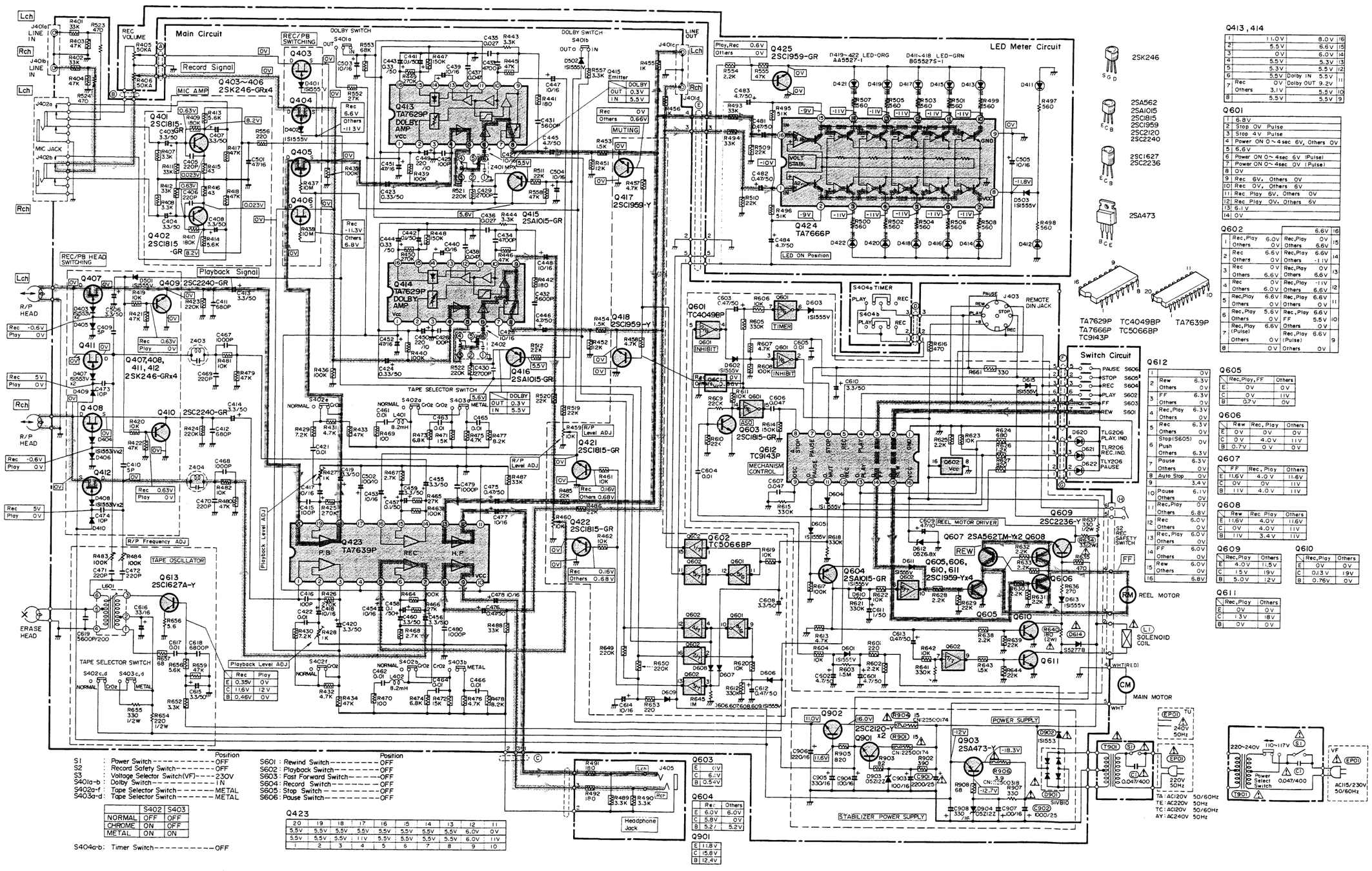



Figure 38

# TE.TU.AY.VF.TA.TC

# 11.SCHEMATIC DIAGRAM




Q413, 414

| | | | |
|---|---|---|---|
| 1 | 11.0V | 8.0V | 16 |
| 2 | 5.5V | 6.6V | 15 |
| 3 | 0V | 6.0V | 14 |
| 4 | 5.5V | 5.3V | 13 |
| 5 | 5.3V | 5.5V | 12 |
| 6 | 5.5V | Dolby IN 5.5V | 11 |
| 7 | Rec 0V | Dolby OUT 9.2V | |
| | Others 3.1V | 5.5V | 10 |
| 8 | 5.5V | 5.5V | 9 |

Q601

| | |
|---|---|
| 1 | 6.8V |
| 2 | Stop 0V Pulse |
| 3 | Stop 4V Pulse |
| 4 | Power ON 0~4sec 6V, Others 0V |
| 5 | 6.6V |
| 6 | Power ON 0~4sec 6V (Pulse) |
| 7 | Power ON 0~4sec 0V (Pulse) |
| 8 | 0V |
| 9 | Rec 6V, Others 0V |
| 10 | Rec 0V, Others 6V |
| 11 | Rec Play 6V, Others 0V |
| 12 | Rec Play 0V, Others 6V |
| 13 | 6.1V |
| 14 | 0V |

Q602

| | | | | |
|---|---|---|---|---|
| | | | | 6.6V 16 |
| 1 | Rec,Play | 6.0V | Rec,Play | 0V 15 |
| | Others | 0V | Others | 6.6V |
| 2 | Rec | 6.6V | Rec,Play | 6.6V 14 |
| | Others | 0V | Others | -11V |
| 3 | Rec | 0V | Rec,Play | 0V 13 |
| | Others | 6.6V | Others | 6.6V |
| 4 | Rec | 0V | Rec,Play | -11V 12 |
| | Others | 6.0V | Others | 6.6V |
| 5 | Rec,Play | 6.6V | Rec,Play | 6.6V 11 |
| | Others | 0V | Others | 0V |
| 6 | Rec,Play | 5.6V | Rec,Play | 6.6V 10 |
| | Others | 0V | FF | 5.5V |
| 7 | Rec,Play (Pulse) | 6.6V | Others | 0V 9 |
| | Others | 0V | Rec,Play (Pulse) | 6.6V |
| 8 | | 0V | Others | 0V |

Q605

| | Rec,Play,FF | Others |
|---|---|---|
| E | 0V | 0V |
| C | 0V | 11V |
| B | 0.7V | 0V |

Q606

| | Rew | Rec,Play | Others |
|---|---|---|---|
| E | 0V | 0V | 0V |
| C | 0V | 4.0V | 11V |
| B | 0.7V | 0V | 0V |

Q607

| | FF | Rec,Play | Others |
|---|---|---|---|
| E | 11.6V | 4.0V | 11.6V |
| C | 0V | 0V | 11V |
| B | 11V | 4.0V | 11V |

Q608

| | Rew | Rec Play | Others |
|---|---|---|---|
| E | 11.6V | 4.0V | 11.6V |
| C | 0V | 4.0V | 11V |
| B | 11V | 3.4V | 11V |

Q609

| | Rec,Play | Others |
|---|---|---|
| E | 4.0V | 11.5V |
| C | 1.5V | 19V |
| B | 5.0V | 12V |

Q610

| | Rec,Play | Others |
|---|---|---|
| E | 0V | 0V |
| C | 0.13V | 19V |
| B | 0.76V | 0V |

Q611

| | Rec,Play | Others |
|---|---|---|
| E | 0V | 0V |
| C | 13V | 18V |
| B | 0V | 0V |

Q612

| | | |
|---|---|---|
| | | 0V |
| 2 | Rew | 6.3V |
| | Others | 0V |
| 3 | FF | 6.3V |
| | Others | 0V |
| 4 | Rec,Play | 6.3V |
| | Others | 0V |
| 5 | Rec | 6.3V |
| | Others | 0V |
| 6 | Stop(S605) | 0V |
| | Push Others | 6.3V |
| 7 | Pause | 6.3V |
| | Others | 0V |
| 8 | Auto Stop | 0V |
| 9 | | 3.4V |
| 10 | Pause | 6.1V |
| | Others | 0V |
| 11 | Rec,Play | 0V |
| | Others | 6.8V |
| 12 | Rec | 6.0V |
| | Others | 0V |
| 13 | Rec,Play | 6.0V |
| | Others | 0V |
| 14 | FF | 6.0V |
| | Others | 0V |
| 15 | Rew | 6.0V |
| | Others | 0V |
| 16 | | 6.8V |

Q423

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | |
| 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 6.0V | 0V | |
| 5.5V | 5.5V | 5.5V | 11V | 5.5V | 5.5V | 5.5V | 5.5V | 6.0V | 11V | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |

Q603

| | |
|---|---|
| E | 11V |
| C | 6.1V |
| B | 0.54V |

Q604

| | Rec | Others |
|---|---|---|
| E | 6.0V | 6.0V |
| C | 5.8V | 0V |
| B | 5.2/ | 5.2V |

Q901

| | |
|---|---|
| E | 11.8V |
| C | 15.8V |
| B | 12.4V |

| | | Position |
|---|---|---|
| S1 | Power Switch | OFF |
| S2 | Record Safety Switch | OFF |
| S3 | Voltage Selector Switch(VF) | 230V |
| S401a-b | Dolby Switch | IN |
| S402a-f | Tape Selector Switch | METAL |
| S403a-d | Tape Selector Switch | METAL |

| | S402 | S403 |
|---|---|---|
| NORMAL | OFF | OFF |
| CHROME | ON | OFF |
| METAL | ON | ON |

S404a-b: Timer Switch OFF

| | | Position |
|---|---|---|
| S601 | Rewind Switch | OFF |
| S602 | Playback Switch | OFF |
| S603 | Fast Forward Switch | OFF |
| S604 | Record Switch | OFF |
| S605 | Stop Switch | OFF |
| S606 | Pause Switch | OFF |

**Figure 39**

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

# 12. ELECTRICAL PARTS LOCATIONS

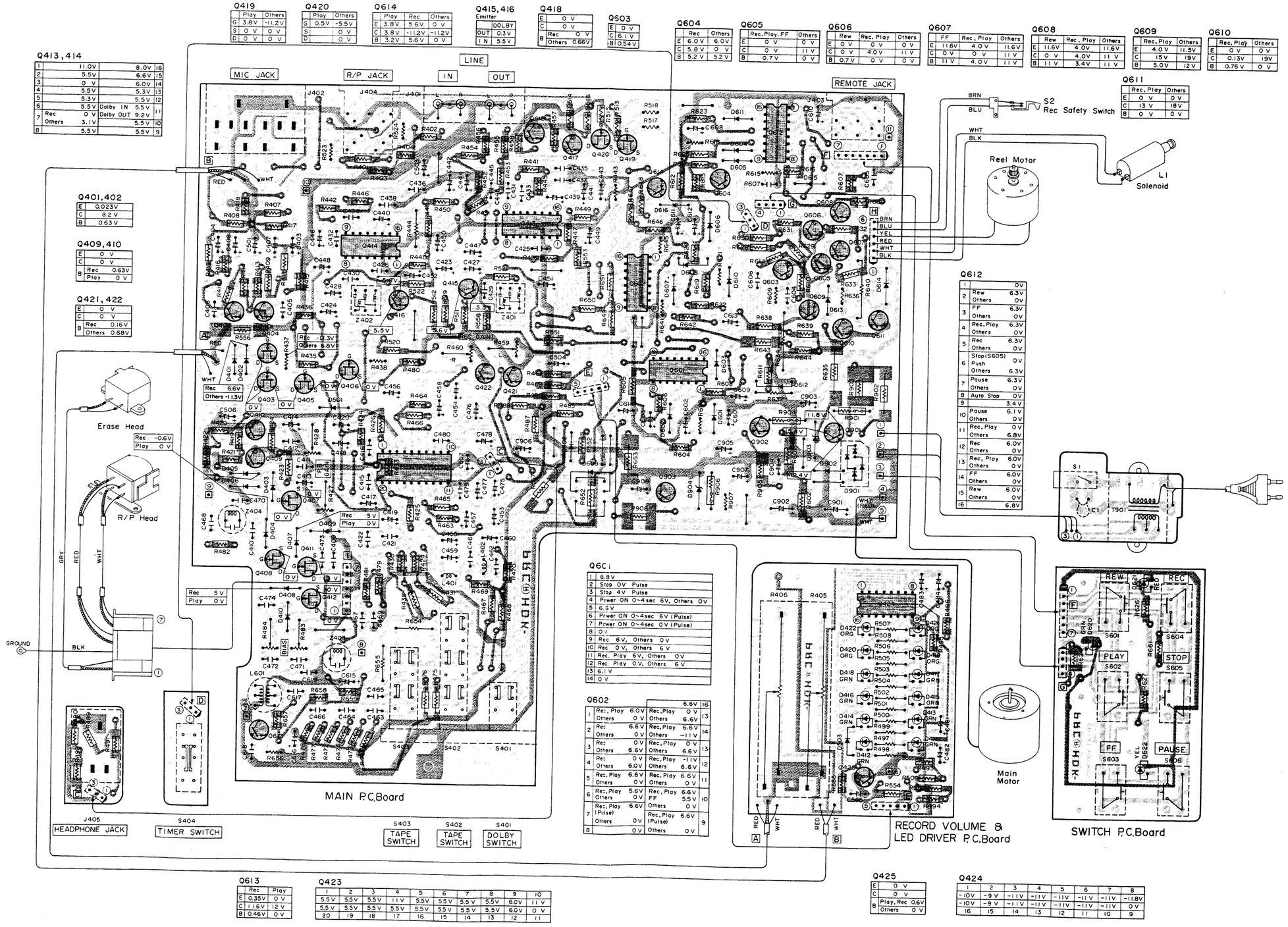

Q419
Play / Others
G 3.8V / -11.2V
S 0 V / 0 V
D 0 V / 0 V
Q420
Play / Others
G 0.5V / -5.5V
S / 0 V
D / 0 V
Q614
Play / Rec / Others
E 3.8V / 5.6V / 0 V
C 3.8V / -11.2V / -11.2V
B 3.2V / 5.6V / 0 V
Q415,416
Emitter / DOLBY
OUT 0.3V
IN 5.5V
Q418
E 0 V
C 0 V
B Rec 0 V / Others 0.66V
Q603
E 0 V
C 6.1 V
B 0.54 V
Q604
Rec / Others
E 6.0 V / 6.0 V
C 5.8 V / 0 V
B 5.2 V / 5.2 V
Q605
Rec, Play, FF / Others
E 0 V / 0 V
C 0 V / 11 V
B 0.7 V / 0 V
Q606
Rew / Rec, Play / Others
E 0 V / 0 V / 0 V
C 0 V / 4.0 V / 11 V
B 0.7 V / 0 V / 0 V
Q607
FF / Rec, Play / Others
E 11.6V / 4.0 V / 11.6V
C 0 V / 0 V / 11 V
B 11 V / 4.0 V / 11 V
Q608
Rew / Rec, Play / Others
E 11.6V / 4.0V / 11.6V
C 0 V / 4.0V / 11 V
B 11 V / 3.4 V / 11 V
Q609
Rec, Play / Others
E 4.0 V / 11.5V
C 15V / 19V
B 5.0V / 12V
Q610
Rec, Play / Others
E 0 V / 0 V
C 0.13V / 19V
B 0.76 V / 0 V
Q611
Rec, Play / Others
E 0 V / 0 V
C 13 V / 18 V
B 0 V / 0 V
Q612
1 / 0V
2 Rew / 6.3V; Others / 0V
3 FF / 6.3V; Others / 0V
4 Rec, Play / 6.3V; Others / 0V
5 Rec / 6.3V; Others / 0V
6 Stop(S605) Push / 0V; Others / 6.3V
7 Pause / 6.3V; Others / 0V
8 Auto Stop / 0V
9 / 3.4 V
10 Pause / 6.1 V; Others / 0V
11 Rec, Play / 0V; Others / 6.8V
12 Rec / 6.0V; Others / 0V
13 Rec, Play / 6.0V; Others / 0V
14 FF / 6.0V; Others / 0V
15 Rew / 6.0V; Others / 0V
16 / 6.8V
Q413,414
1 11.0V / 8.0V 16
2 5.5V / 6.6V 15
3 0 V / 6.0V 14
4 5.5V / 5.3V 13
5 5.3V / 5.5V 12
6 5.5V Dolby IN 5.5V 11
7 Rec 0 V Dolby OUT 9.2V
Others 3.1V / 5.5V 10
8 5.5V / 5.5V 9
Q401,402
E 0.023V
C 8.2 V
B 0.63 V
Q409,410
E 0 V
C 0 V
B Rec 0.63V
Play 0 V
Q421,422
E 0 V
C 0 V
B Rec 0.16V
Others 0.68V
Q613
Rec / Play
E 0.35V / 0 V
C 11.6V / 12 V
B 0.46V / 0 V
Q423
1 2 3 4 5 6 7 8 9 10
5.5V 5.5V 5.5V 11 V 5.5V 5.5 V 5.5 V 5.5V 6.0V 11 V
5.5 V 5.5V 5.5 V 5.5V 5.5V 5.5 V 5.5 V 5.5V 6.0V 0 V
20 19 18 17 16 15 14 13 12 11
Q425
E 0 V
C 0 V
B Play, Rec 0.6V
Others 0 V
Q424
1 2 3 4 5 6 7 8
-10V -9 V -11V -11V -11V -11 V -11V -11.8V
-10V -9 V -11 V -11V -11V -11V -11V 0 V
16 15 14 13 12 11 10 9
Q602
1 Rec, Play 6.0V / Others 0 V; Rec, Play 0 V / Others 6.6V; 13
2 Rec 6.6 V / Others 0 V; Rec, Play 6.6V / Others -11 V; 14
3 Rec 0 V / Others 6.6V; Rec, Play 0 V / Others 6.6 V; 13
4 Rec 0 V / Others 6.0V; Rec, Play -11V / Others 6.6V; 12
5 Rec, Play 6.6 V / Others 0 V; Rec, Play 6.6V / Others 0 V; 11
6 Rec, Play 5.6V / Others 0 V; Rec, Play 6.6V / FF 5.5 V / Others 0 V; 10
7 Rec, Play (Pulse) 6.6V / Others 0V; Rec, Play (Pulse) 6.6V / Others 0 V; 9
8 0 V
Q6Ci
1 6.8V
2 Stop 0V Pulse
3 Stop 4V Pulse
4 Power ON 0~4sec 6V, Others 0V
5 6.8 V
6 Power ON 0~4sec 6V (Pulse)
7 Power ON 0~4sec 0V (Pulse)
8 0 V
9 Rec 6V, Others 0 V
10 Rec 0 V, Others 6 V
11 Rec, Play 6V, Others 0V
12 Rec, Play 0V, Others 6 V
13 6.1 V
14 0 V
LINE
MIC JACK
R/P JACK
IN
OUT
REMOTE JACK
Erase Head
Rec -0.6V
Play 0 V
R/P Head
GRY
RED
WHT
BLK
GROUND
Rec 5 V
Play 0 V
Rec 6.3V
Others 6.8V
Rec 6.6V
Others -11.3V
Rec -0.6V
Play 0 V
Rec 5V
Play 0V
Rec 5.3V
Others 6.8V
5.5V
5.6V
REC GAIN
MAIN P.C.Board
J405
HEADPHONE JACK
S404
TIMER SWITCH
S403
TAPE SWITCH
S402
TAPE SWITCH
S401
DOLBY SWITCH
BRN
BLU
S2
Rec Safety Switch
WHT
BLK
Reel Motor
L1
Solenoid
BRN
BLU
YEL
RED
WHT
BLK
Main Motor
RECORD VOLUME & LED DRIVER P.C.Board
SWITCH P.C.Board
S1
REW
REC
PLAY
STOP
FF
PAUSE
S601
S602
S603
S604
S605
S606

**Figure 40**

PC-G2
PC-G2T

# 14-1. EXPLODED VIEW (MECHANISM)

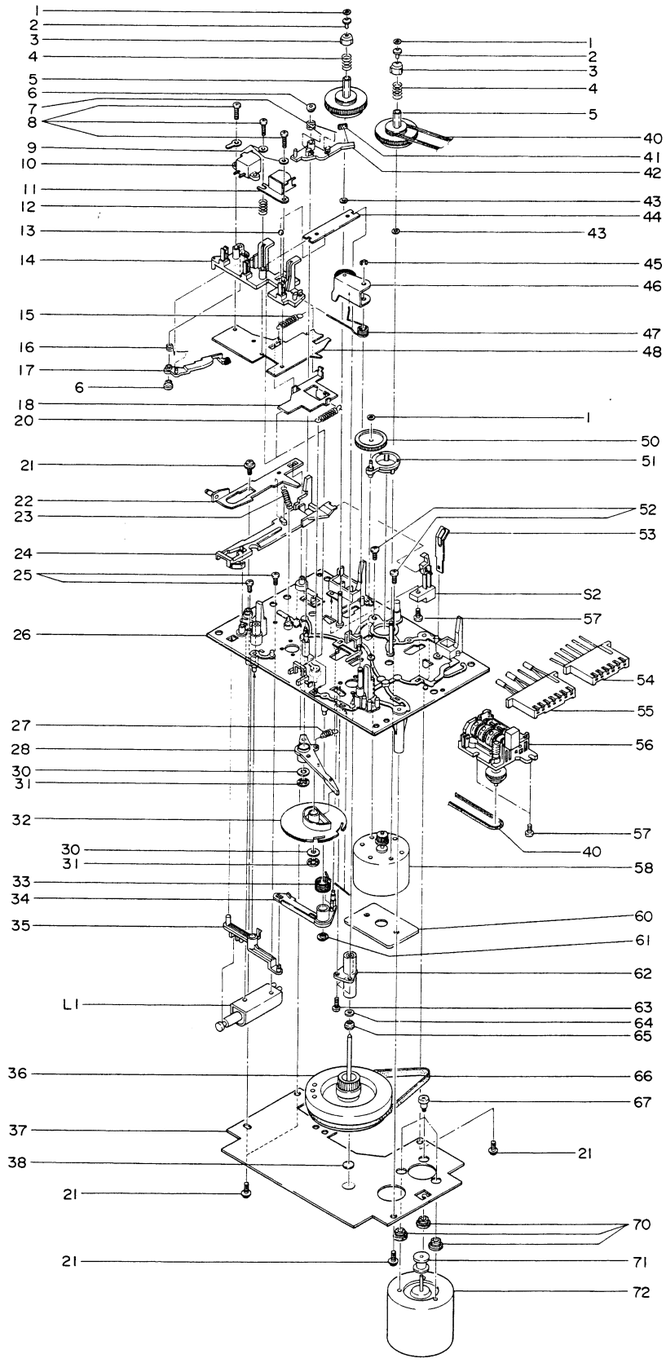



Figure 42

NOTE: Install the motor pulley so that the Gap should be 3.3mm.

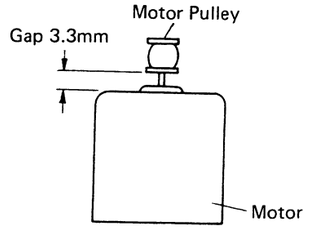



Figure 43

**NOTE:** Parts excluded in the parts list are not available as replacement parts.



# 14-2. PARTS LIST (MECHANISM)

| Symbol No. | Part No. | Description |
|---|---|---|
| 1 | 25766050 | Washer, 1.6$\phi$, Reel |
| 2 | 25754384 | Capstan, Reel |
| 3 | 25754304 | Reel, Collar |
| 4 | 25777033 | Spring, Reel |
| 5 | 25754383 | Reel, Drum |
| 6 | 25783199 | Washer, 2$\phi$, Tension Lever |
| 7 | 25773589 | Spring, Tension |
| 8 | 22707692 | Screw, DTBID, 2$\phi$ x 14mm |
| 10 | 22218246 | Head, Erase, HET-63 |
| 11 | 22217385 | Head, Record/Playback, HRPT-95 |
| 12 | 25772240 | Spring, Head |
| 13 | 25757120 | Steel Ball, 3$\phi$ |
| 14 | 25783256 | Head Base |
| 15 | 25776315 | Spring, Play Slider |
| 16 | 25773590 | Spring, Erase |
| 17 | 25715185 | Erase Lever Ass'y |
| 20 | 25771806 | Spring, Play Slider |
| 21 | 22707361 | Screw, TPAN, 2.6$\phi$ x 8mm |
| 23 | 25776309 | Spring, Lock Slider |
| 24 | 25782425 | Lock Slider |
| 25 | 22707475 | Screw, BID, 2.6$\phi$ x 4mm |
| 26 | 25791392 | Main Chassis Ass'y |
| 27 | 25776288 | Sprign, Play Lever |
| 28 | 25782422 | Play Lever |
| 30 | 22703269 | Washer, 3$\phi$ |
| 31 | 20798033 | Ring, Play Lever/Cam Gear |
| 32 | 25756248 | Cam Gear, Play D |
| 33 | 25773529 | Spring, Play Lever |
| 34 | 25782415 | Lock Lever, Play |
| 35 | 25782414 | Lever, Solenoid |
| 36 | 25717505 | Flywheel Ass'y |
| 38 | 25764593 | Washer, Thrust |
| 40 | 25755285 | Belt, Counter |
| 41 | 25762406 | Felt, Friction |
| 42 | 25782483 | Tension Lever |
| 43 | 25764597 | Washer, 2.1$\phi$ |
| 44 | 25779140 | Spring, Head, Slider |
| 45 | 22703118 | E Washer, 2$\phi$ Pressure Roller |
| 46 | 25717470 | Pressure Roller Ass'y |
| 47 | 25773526 | Spring, Pressure Roller |
| 50 | 25756241 | Gear, Transfer |
| 51 | 25713539 | Take-up Lever Ass'y |
| 52 | 22707323 | Screw, BID, 2.6$\phi$ x 8mm |
| 53 | 25779214 | Spring, Holder |

| Symbol No. | Part No. | Description |
|---|---|---|
| 56 | 25873252 | Counter |
| 57 | 22707301 | Screw, BID, 2.6$\phi$ x 8mm, Tapping |
| 58 | 25791358 | Motor Ass'y, Reel |
| 61 | 25783226 | Bush |
| 62 | 25717472 | Capstan Holder Ass'y |
| 63 | 22707366 | Screw, DTBID, 2.6$\phi$ x 6mm |
| 64 | 25764486 | Washer, 2.5$\phi$ |
| 65 | 25777071 | Spring, Flywheel |
| 66 | 25755515 | Belt, Main |
| 67 | 22707429 | Screw, Special, Motor 2.6$\phi$ x 1.8mm x 4.9mm |
| 70 | 25761238 | Cushion, Motor |
| 71 | 25758103 | Pulley, Main Motor |
| 72 | 22125696 | Motor, Main |

# 16. PARTS LIST

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

| Symbol No. | Part No. | Description |
|---|---|---|
| **IC'S, TRANSISTORS & DIODES** | | |
| Q401, 402 | | Transistor, 2SC1815 NEW-GR |
| Q403, 404 | | Transistor, 2SK246-GR |
| 405, 406 | | |
| 407, 408 | | |
| Q409, 410 | | Transistor, 2SC2240-GR |
| Q411, 412 | | Transistor, 2SK246-GR |
| Q413, 414 | | IC, TA7629P |
| Q415, 416 | | Transistor, 2SA1015-GR |
| Q417, 418 | | Transistor, 2SC1959NEW-Y |
| Q419, 420 | | Transistor, 2SK246-GR (TD) |
| Q421, 422 | | Transistor, 2SC1815 NEW-GR |
| Q423 | | IC, TA7639P |
| Q424 | | IC, TA7666P |
| Q425 | | Transistor, 2SC1959NEW-GR |
| Q601 | | IC, TC4049BP |
| Q602 | | IC, TC5066BP |
| Q603 | | Transistor, 2SC1815NEW-GR |
| Q604 | | Transistor, 2SA1015-GR |
| Q605, 606 | | Transistor, 2SC1959NEW-Y |
| Q607, 608 | | Transistor, 2SA562TM-Y |
| Q609 | | Transistor, 2SC2236-Y |
| Q610 | | Transistor, 2SC1959NEW-Y |
| Q611 | | Transistor, 2SC1959NEW-Y |
| Q612 | | IC, TC9143P |
| Q613 | | Transistor, 2SC1627A-Y |
| Q614 | | Transistor, 2SA1015-GR (TD) |
| Q901 | | Transistor, 2SC2120-Y |
| Q902 | | Transistor, 2SC2120-Y |
| Q903 | | Transistor, 2SA473-Y |
| D401, 402 | | Diode, 1S1555V |
| D403, 404 | | Diode, 1S1553V |
| 405,406 | | |
| 407, 408 | | |
| 409,410 | | |
| D411, 412 | 22115708 | Diode, BG5527S-1,LED GRN |
| 413, 414 | | |
| 415, 416 | | |
| 417, 418 | | |
| D419, 420 | 22115707 | Diode, AA5527S-1,LED ORG |
| 421, 422 | | |
| D501, 502 | | Diode, 1S1555V |
| 503 | | |

| Symbol No. | Part No. | Description |
|---|---|---|
| D601, 602 | | Diode, 1S1555V |
| 603, 604 | | |
| 605, 606 | | |
| 607, 608 | | |
| 609, 610 | | |
| 611 | | |
| 613, 615 | | |
| D616 | | Diode, 1S1555V (TD) |
| ⚠ D614 | | Diode, S5277B |
| D620 | | Diode, TLG206, LED GRN |
| D621 | | Diode, TLR206, LED RED |
| D622 | | Diode, TLY206, LED YEL |
| D612 | | Diode, 05Z6.8X |
| ⚠ D901 | 22115571 | Diode, SIVB10 |
| D902 | | Diode, 1S1553V |
| D903, 904 | | Diode, 05Z12Z |
| **COILS & TRANSFORMERS** | | |
| ⚠ L1 | 22147228 | Solenoid Coil, Play |
| L401, 402 | 22232252 | Coil, 8.2mH |
| L601 | 22235201 | Coil, Oscillator |
| ⚠ T901 | 22224023 | Transformer, Power (TE,TD) |
| ⚠ T901 | 22224024 | Transformer, Power (TU,AY) |
| ⚠ T901 | 22224025 | Transformer, Power (VF) |
| ⚠ T901 | 22224022 | Transformer, Power (TA) |
| ⚠ T901 | 22224026 | Transformer, Power (TC) |
| **ELECTRICAL PARTS** | | |
| ⚠ S1 | 22195686 | Switch, Push, Power (TE, TU, AY, TD, VF) |
| ⚠ S1 | 22195811 | Switch, Push, Power (TA, TC) |
| S2 | 22195727 | Switch, Leaf, REC Sefety |
| ⚠ S3 | 22146186 | Switch, Slide, Voltage Selector (VF) |



| Symbol No. | Part No. | Description |
|---|---|---|
| S401a-b | 22195887 | Switch, Push, Dolby NR |
| S402a-d | 22195887 | Switch, Push Tape Selector, Normal/$CrO_2$ |
| S402a-d | 22195887 | Switch, Push Tape Selector, Normal/$CrO_2$ |
| S403a-d | 22195887 | Switch, Push Tape Selector, $CrO_2$/Metal |
| S404a-b | 22195888 | Switch, Slide, Timer, REC/PLAY |
| S601 | 22195930 | Switch, Key, REW |
| S602 | 22195930 | Switch, Key, PLAY |
| S603 | 22195930 | Switch, Key, FF |
| S604 | 22195930 | Switch, Key, REC |
| S605 | 22195930 | Swithc, Key, STOP |
| S606 | 22195930 | Switch, Key, PAUSE |
| J401a-d | 22163831 | Jack, US4P |
| J402a-b | 22163886 | Jack, Microphone, 6$\phi$ |
| J403 | 22163879 | DIN Socket, 8P, Remote Control |
| J404 | 22167908 | DIN Socket, 5P, Record/ Playback (TD) |
| J405 | 22163888 | Jack, 6$\phi$, Headphone |
| Z401, 402 | 22153186 | Filter, Dolby |
| Z403, 404 | 22153187 | Filter, Bias Trap |
| ⚠ EP01 | 22176286 | Cord, Power, E2ES (TE, TD) |
| ⚠ EP01 | 22176573 | Cord, Power, EPUC (TC, TA) |
| ⚠ EP01 | 22176588 | Cord, Power, A2SA-7A (AY) |
| ⚠ EP01 | 22176628 | Cord, Power, BS2 (TU) |
| ⚠ EP01 | 22176125 | Cord, Power, EP (VF) |

## CAPACITORS

D = ±0.5pF, J=±5%, K=±10%, M=±20%, P=–0 + 100%
ABBREVIATIONS: CD=Ceramic Disk, EL=Electrolytic, BL=Barrier Layer, MY=Mylar, PP=Polypropylene

| | | |
|---|---|---|
| ⚠ C1 | 22340150 | CD, 4700pF, 400V, M (TE, TD, TU, AY, VF) |
| ⚠ C1 | 22340140 | CD, 0.01mfd, 125V, P (TA, TC) |
| C403, 404 | 22488339 | EL, 3.3mfd, 50V |
| C405, 406 | 22349221 | CD, 220pF, 50V, K |
| C407, 408 | 22488339 | EL, 3.3mfd, 50V |
| C409, 410 | 22361509 | CD, 5pF, 50V, D |
| C411, 412 | 22349681 | CD, 680pF, 50V, K |
| C413, 414 | 22468339 | EL, 3.3mfd, 50V, Low Noise |
| C415, 416 | 22362101 | CD, 100pF, 50V, K |
| C417, 418 | 22465100 | EL, 10mfd, 16V, Low Noise |
| C419, 420 | 22488339 | EL, 3.3mfd, 50V |
| C421,422 | 22371103 | MY, 0.01mfd, 50V, J |
| C423, 424 | 22488338 | EL, 0.33mfd, 50V |

| Symbol No. | Part No. | Description |
|---|---|---|
| C425, 426 | 22362101 | CD, 100pF, 50V, K |
| C427, 428 | 22485100 | EL, 10mfd, 16V |
| C429, 430 | 22371272 | MY, 2700pF, 50V, J |
| C431, 432 | 22371562 | MY, 5600pF, 50V, J |
| C433, 434 | 22371472 | MY, 4700pF, 50V, J |
| C435, 436 | 22371273 | MY, 0.027mfd, 50V, J |
| C437, 438 | 22371473 | MY, 0.047mfd, 50V, J |
| C439, 440 | 22485100 | EL, 10mfd, 16V |
| C441, 442 | 22480003 | EL, 0.1mfd, 50V |
| C443, 444 | 22488338 | EL, 0.33mfd, 50V |
| C445, 446 | 22488479 | EL, 4.7mfd, 50V |
| C447, 448 | 22485100 | EL, 10mfd, 16V |
| C449, 450 | 22483221 | EL, 220mfd, 10V |
| C451, 452 | 22485470 | EL, 47mfd, 16V |
| C453, 454 | 22485100 | EL, 10mfd, 16V |
| C455, 456 | 22488339 | EL, 3.3mfd, 50V |
| C457, 458 | 22480003 | EL, 0.1mfd, 50V |
| C459, 460 | 22488339 | EL, 3.3mfd, 50V |
| C461, 462 | 22371103 | MY, 0.01mfd, 50V, J |
| C463, 464 | 22371103 | MY, 0.01mfd, 50V, J |
| C465, 466 | 22371103 | MY, 0.01mfd, 50V, J |
| C467, 468 | 22349102 | CD, 1000pF, 50V, K |
| C469, 470 | 22349221 | CD, 220pF, 50V, K |
| C471, 472 | 22349221 | CD, 220pF, 50V, K |
| C473, 474 | 22361100 | CD, 10pF, 50V, D |
| C475, 476 | 22488478 | EL, 0.47mfd, 50V |
| C477, 478 | 22485100 | EL, 10mfd, 16V |
| C479, 480 | 22349102 | CD, 1000pF, 50V, K |
| C481, 482 | 22488478 | EL, 0.47mfd, 50V |
| C483, 484 | 22488479 | EL, 4.7mfd, 50V |
| C501 | 22485470 | EL, 47mfd, 16V |
| C502 | 22483101 | EL, 100mfd, 10V |
| C503 | 22485100 | EL, 10mfd, 16V |
| C504 | 22485100 | EL, 10mfd, 16V |
| C505 | 22485100 | EL, 10mfd, 16V |
| C506 | 22488339 | EL, 3.3mfd, 50V |
| C601 | 22488479 | EL, 4.7mfd, 50V |
| C602 | 22488479 | EL, 4.7mfd, 50V |
| C603 | 22488478 | EL, 0.47mfd, 50V |
| C604 | 22360327 | BL, 0.01mfd, 25V, M |
| C605 | 22360327 | BL, 0.01mfd, 25V, M |
| C606 | 22360331 | BL, 0.047mfd, 25V, M |
| C607 | 22360331 | BL, 0.047mfd, 25V, M |
| C608 | 22488339 | EL, 3.3mfd, 50V |
| C609 | 22483470 | EL, 47mfd, 10V |
| C610 | 22488339 | EL, 3.3mfd, 50V |
| C611 | 22488109 | EL, 1mfd, 50V |
| C612 | 22488478 | EL, 0.47mfd, 50V |
| C613 | 22488478 | EL, 0.47mfd, 50V |
| C614 | 22485100 | EL, 10mfd, 16V |

| Symbol No. | Part No. | Description |
|---|---|---|
| C615 | 22488339 | EL, 3.3mfd, 50V |
| C616 | 22485330 | EL, 33mfd, 16V |
| C617 | 22360327 | BL, 0.01mfd, 25V, M |
| C618 | 22360326 | BL, 6800pF, 25V, M |
| C619 | 22380103 | PS, 5600pF, 220V, K |
| | 22321301 | PP,5600pF, 220V, K |
| ⚠ C901 | 22486222 | EL, 2200mfd, 25V |
| ⚠ C902 | 22486102 | EL, 1000mfd, 25V |
| C903 | 22485101 | EL, 100mfd, 16V |
| C904 | 22485101 | EL, 100mfd, 16V |
| C905 | 22485331 | EL, 330mfd, 16V |
| C906 | 22485221 | EL, 220mfd, 16V |
| C907 | 22485101 | EL, 100mfd, 16V |
| C908 | 22485331 | EL, 330mfd, 16V |

## RESISTORS

All resistors are ¼W, ±5% carbon film unless otherwise noted, K=1000, M=1000000

| | | |
|---|---|---|
| R401, 402 | 22555333 | 33K ohm (PRC) |
| R403, 404 | 22555473 | 47K (PRC) |
| R405, 406 | 22650463 | 50K ohm, A, Variable, Record Volume |
| R407, 408 | 22555332 | 3.3K ohm (PRC) |
| R409, 410 | 22555334 | 330K ohm (PRC) |
| R411, 412 | 22555223 | 22K ohm (PRC) |
| R413, 414 | 22555562 | 5.6K ohm (PRC) |
| R415, 416 | 22555470 | 47 ohm (PRC) |
| R417, 418 | 22555473 | 47K ohm (PRC) |
| R419, 420 | 22555103 | 10K ohm (PRC) |
| R421, 422 | 22555473 | 47K ohm (PRC) |
| R423, 424 | 22555224 | 220K ohm (PRC) |
| R425, 426 | 22555274 | 270K ohm (PRC) |
| R427, 428 | 22658622 | 1K ohm, Semi-fixed Variable |
| R429, 430 | 22555682 | 7.2K ohm (PRC) |
| R431, 432 | 22555472 | 4.7K ohm(PRC) |
| R433, 434 | 22555473 | 47K ohm (PRC) |
| R435, 436 | 22555104 | 100K ohm (PRC) |
| R437, 438 | 22545106 | 10M ohm |
| R439, 440 | 22555104 | 100K ohm (PRC) |
| R441, 442 | 22555181 | 180 ohm (PRC) |
| R443, 444 | 22555332 | 3.3K ohm |
| R445, 446 | 22555473 | 47K ohm (PRC) |
| R447, 448 | 22555154 | 150K ohm (PRC) |
| R449, 450 | 22555274 | 270K ohm (PRC) |
| R451, 452 | 22555123 | 12K ohm (PRC) |
| R453, 454 | 22555152 | 1.5K ohm (PRC) |

| Symbol No. | Part No. | Description |
|---|---|---|
| R455, 456 | 22555102 | 1K ohm (PRC) |
| R457, 458 | 22555472 | 4.7K ohm (PRC) |
| R459, 460 | 22658599 | 10K ohm, Semi-fixed Variable |
| R461, 462 | 22555103 | 10K ohm (PRC) |
| R463, 464 | 22555104 | 100K ohm (PRC) |
| R465, 466 | 22555273 | 27K ohm (PRC) |
| R467, 468 | 22555272 | 2.7K ohm (PRC) |
| R469,470 | 22555101 | 100 ohm (PRC) |
| R471, 472 | 22555153 | 15K ohm (PRC) |
| R473, 474 | 22555682 | 6.8K ohm (PRC) |
| R475, 576 | 22555472 | 4.7K ohm (PRC) |
| R477, 478 | 22555822 | 8.2K ohm (PRC) |
| R479, 480 | 22555473 | 47K ohm (PRC) |
| R481, 482 | 22555103 | 10K ohm (PRC) |
| R483, 484 | 22658604 | 100Kohm,Semi-fixedVariable |
| R485, 486 | 22555223 | 22K ohm (PRC) |
| R487, 488 | 22555333 | 33K ohm (PRC) |
| R489, 490 | 22555332 | 3.3K ohm (PRC) |
| R491, 492 | 22555181 | 180 ohm (PRC) |
| R493, 494 | 22555333 | 33K ohm (PRC) |
| R495, 496 | 22555473 | 51K ohm (PRC) |
| R497, 498 | 22545561 | 560 ohm |
| R499, 500 | 22545561 | 560 ohm |
| R501, 502 | 22545561 | 560 ohm |
| R503, 504 | 22545561 | 560 ohm |
| R505, 506 | 22545561 | 560 ohm |
| R507, 508 | 22545561 | 560 ohm |
| R509, 510 | 22555223 | 22K ohm (PRC) |
| R511, 512 | 22555223 | 22K ohm (PRC) |
| R513, 514 | 22555102 | 1K ohm (PRC) (TD) |
| R515, 516 | 22555104 | 100K ohm (PRC) (TD) |
| R517, 518 | 22545106 | 10M ohm (TD) |
| R519, 520 | 22555223 | 22K ohm (PRC) |
| R521. 522 | 22555224 | 220K ohm (PRC) |
| R523. 524 | 22555471 | 470 ohm (TE, TU, AY, VF, TA, TC) |
| R551 | 22555224 | 220K ohm (PRC) |
| R552 | 22555273 | 27K ohm (PRC) |
| R553 | 22555683 | 68K ohm (PRC) |
| R554 | 22555222 | 2.2K ohm (PRC) |
| R555 | 22555473 | 47K ohm (PRC) |
| R556 | 22555221 | 220 ohm (PRC) |
| R557 | 22555332 | 3.3K ohm (PRC) |
| R558 | 22555473 | 47K ohm (PRC) |
| R601 | 22555221 | 220 ohm (PRC) |
| R602 | 22555222 | 2.2K ohm (PRC) |
| R603 | 22555155 | 1.5M ohm |
| R604 | 22555103 | 10K ohm (PRC) |
| R605 | 22555334 | 330K ohm (PRC) |
| R606 | 22555103 | 10K ohm (PRC) |

| Symbol No. | Part No. | Description |
|---|---|---|
| R607 | 22555472 | 4.7K ohm (PRC) |
| R608 | 22555104 | 100K ohm (PRC) |
| R609 | 22555224 | 220K ohm |
| R610 | 22555223 | 22K ohm (PRC) |
| R611 | 22555103 | 10K ohm (PRC) |
| R612 | 22555334 | 330K ohm (PRC) |
| R613 | 22555472 | 4.7K ohm (PRC) |
| R614 | 22555154 | 150K ohm (PRC) |
| R615 | 22555334 | 330K ohm |
| R616 | 22555471 | 470 ohm(PRC) |
| R617 | 22555104 | 100K ohm (PRC) |
| R618 | 22555334 | 330K ohm |
| R619 | 22555103 | 10K ohm (PRC) |
| R620 | 22555103 | 10K ohm (PRC) |
| R621 | 22555334 | 330K ohm |
| R622 | 22555103 | 10K ohm(PRC) |
| R623 | 22555103 | 10K ohm (PRC) |
| R624 | 22555681 | 680 ohm (PRC) |
| R625 | 22555222 | 2.2K ohm (PRC) |
| R626 | 22555122 | 1.2K ohm (PRC) |
| R627 | 22555821 | 820 ohm(PRC) |
| R628 | 22555222 | 2.2K ohm (PRC) |
| R629 | 22555223 | 22K ohm (PRC) |
| R630 | 22555222 | 2.2K ohm (PRC) |
| R631 | 22555222 | 2.2K ohm (PRC) |
| R632 | 22555222 | 2.2K ohm (PRC) |
| R633 | 22555222 | 2.2K ohm (PRC) |
| ⚠ R634 | 22570301 | 33 ohm, 2W, Metal Film |
| R635 | 22555471 | 470 ohm (PRC) |
| R636 | 22555221 | 220 ohm (PRC) |
| R637 | 22547331 | 330 ohm, 1/2W |
| R638 | 22555222 | 2.2k ohm (PRC) |
| R639 | 22555223 | 22K ohm (PRC) |
| ⚠ R640 | 22570310 | 180 ohm, 2W Metal Oxided Film |
| R641 | 22555334 | 330K ohm |
| R642 | 22555103 | 10K ohm (PRC) |
| R643 | 22555152 | 1.5K ohm (PRC) |
| R644 | 22555223 | 22K ohm (PRC) |
| R645 | 22555105 | 1M ohm |
| R646 | 22555223 | 22K ohm (PRC) (TD) |

| Symbol No. | Part No. | Description |
|---|---|---|
| R647 | 22555104 | 100K ohm (PRC) (TD) |
| R648 | 22555104 | 100K ohm (PRC) (TD) |
| R649 | 22555224 | 220K ohm (PTC) |
| R650 | 22555224 | 220K ohm (PRC) |
| R652 | 22555332 | 3.3K ohm (PRC) |
| R653 | 22555221 | 220 ohm (PRC) |
| R654 | 22547221 | 220 ohm, 1/2W |
| R655 | 22547331 | 330 ohm, 1/2W |
| R656 | 22555569 | 5.6 ohm |
| R657 | 22555680 | 68 ohm (PRC) |
| R659 | 22555473 | 47K ohm (PRC) |
| R661 | 22555331 | 330 ohm (PRC) |
| ⚠ R901 | 22500174 | 15 ohm, Fusible |
| R902 | 22555391 | 390 ohm (PRC) |
| R903 | 22555820 | 82 ohm (PRC) |
| ⚠ R904 | 22500174 | 15 ohm, Fusible |
| R905 | 22555821 | 820 ohm (PRC) |
| ⚠ R906 | 22500318 | 3.9 ohm, Fusible |
| R907 | 22555331 | 330 ohm |
| R908 | 22555680 | 68 ohm (PRC) |

## ACCESSORIES

| | | |
|---|---|---|
| AC01 | 22164775 | Conector Cord |
| AC02 | 22990756 | Head Cleaner |
| AC03 | 22903114 | Owner's Manual (TE, TD) (PC-G2, Aurex by TOSHIBA) |
| AC03 | 22903116 | Owner's Manual (VF) (PC-G2, Aurex by TOSHIBA) |
| AC03 | 22903112 | Owner's Manual (TA) (PC-G2, TOSHIBA) |
| AC03 | 22903113 | Owner's Manual (TC) (PC-G2, Aurex) |
| AC03 | 22903115 | Owner's Manual (TU, AY) (PC-G2/PC-G2T, Aurex by TOSHIBA/TOSHIBA) |
| AC03 | 22903155 | Owner's Manual (TE) (PC-G2T, TOSHIBA) |
| AC03 | 22903154 | Owner's Manual (VF) (PC-G2T, TOSHIBA) |

**TOSHIBA CORPORATION**
2-1, GINZA 5-CHOME, CHUO-KU, TOKYO 104, JAPAN

PRINTED IN JAPAN 22905035 Jul., (S)

SERVICE DATA
FILE NO. 103-150
SUPPLEMENT-A

# TOSHIBA

STEREO CASSETTE DECK

# PC-G2,PC-G2T

This supplement sheet contains the following contents.

(1) The transistors, Q409 and Q410 have been changed into FETs during production.

(2) Only for TD, AY versions, PC-G2T (Toshiba brand) will be released as a new model. Those will employ FETs for Q409 and Q410 from the first production.

(3) Modifications applied during production are listed.

Please refer to the original SERVICE DATA, FILE No. 100 – 150 for other information.

G2: TE, TD, TU, AY, VF, TA, TC
G2T: TE, TU, AY, TD, VF

# 1. PARTS LIST

Service Information

REPLACEMENTS PARTS

| Changed From | | | | Changed To | | | |
|---|---|---|---|---|---|---|---|
| Symbol No. | Part No. | Description | Q'ty | Symbol No. | Part No. | Description | Q'ty |
| Q409, 410 | | Transistor, 2SC2240-GR | 2 | Q409, 410 | | Transistor, 2SK246-GR | 2 |
| R421 | 22555473 | 47K ohm (PRC) | 1 | R421 | 22555224 | 220K ohm (PRC) | 1 |

ADDITIONAL PARTS

| Symbol No. | Part No. | Description | Q'ty |
|---|---|---|---|
| C485, 486 | 22360331 | BL, 0.047mfd, 25V, M | 2 |

DISUSE PARTS

| Symbol No. | Part No. | Description | Q'ty |
|---|---|---|---|
| R422 | 22555473 | 47K ohm (PRC) | 1 |

PC-G2T – TD, AY

ADDITIONAL PARTS

| Symbol No. | Part No. | Description | Q'ty |
|---|---|---|---|
| 301 | 25819480 | Front Panel Ass'y | 1 |
| 319 | 25864149 | Jack Plate | 1 |
| AC03 | 22903295 | Owner's Manual | 1 |

# 1. PARTS LIST

Service Information

## REPLACEMENTS PARTS

| Changed From | | | | Changed To | | | |
|---|---|---|---|---|---|---|---|
| Symbol No. | Part No. | Description | Q'ty | Symbol No. | Part No. | Description | Q'ty |
| Q409, 410 | | Transistor, 2SC2240-GR | 2 | Q409, 410 | | Transistor, 2SK246-GR | 2 |
| R421 | 22555473 | 47K ohm (PRC) | 1 | R421 | 22555224 | 220K ohm (PRC) | 1 |

## ADDITIONAL PARTS

| Symbol No. | Part No. | Description | Q'ty |
|---|---|---|---|
| C485, 486 | 22360331 | BL, 0.047mfd, 25V, M | 2 |

## DISUSE PARTS

| Symbol No. | Part No. | Description | Q'ty |
|---|---|---|---|
| R422 | 22555473 | 47K ohm (PRC) | 1 |

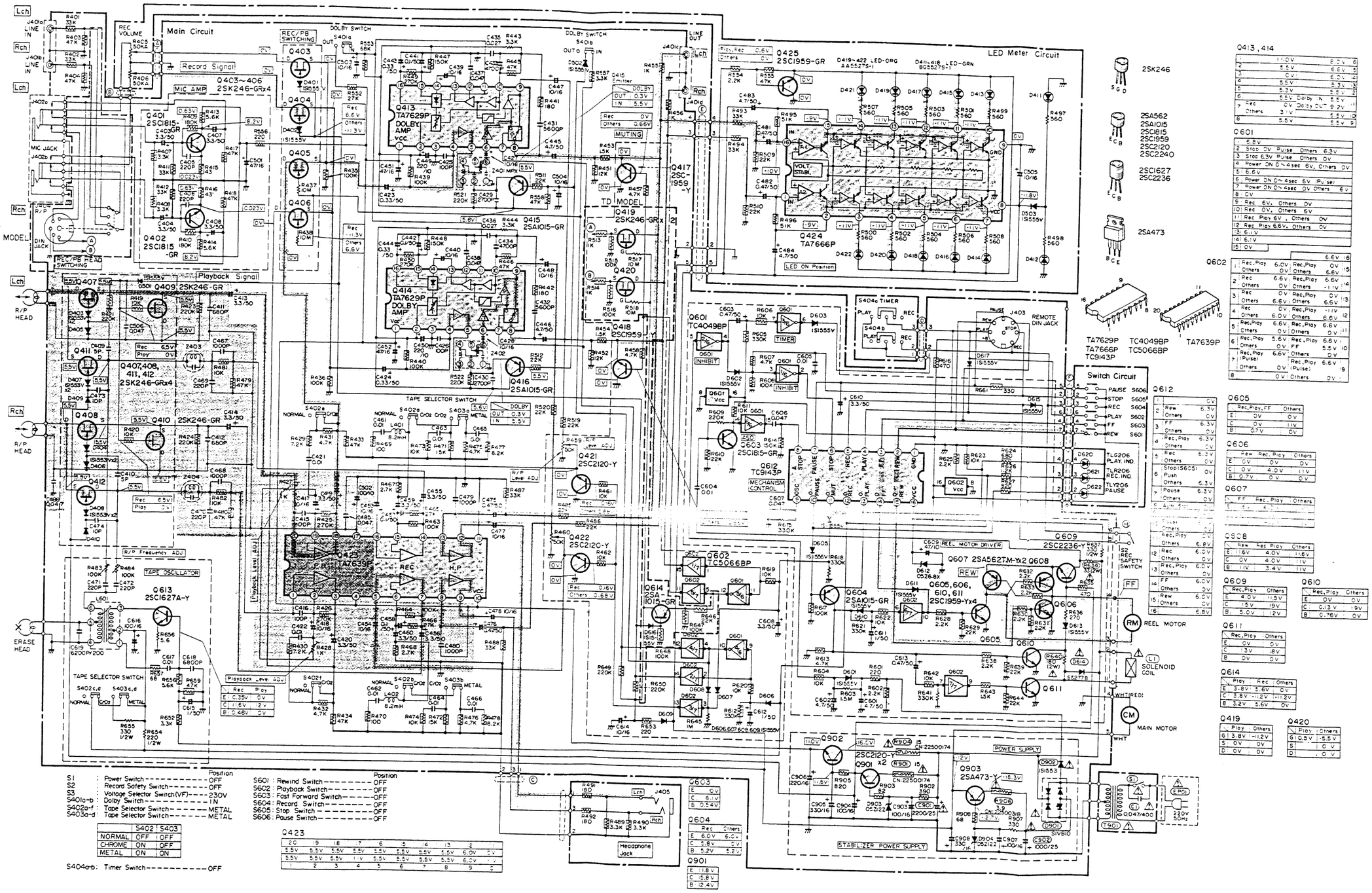
## PC-G2T – TD, AY

## ADDITIONAL PARTS

| Symbol No. | Part No. | Description | Q'ty |
|---|---|---|---|
| 301 | 25819480 | Front Panel Ass'y | 1 |
| 319 | 25864149 | Jack Plate | 1 |
| AC03 | 22903295 | Owner's Manual | 1 |

# TD

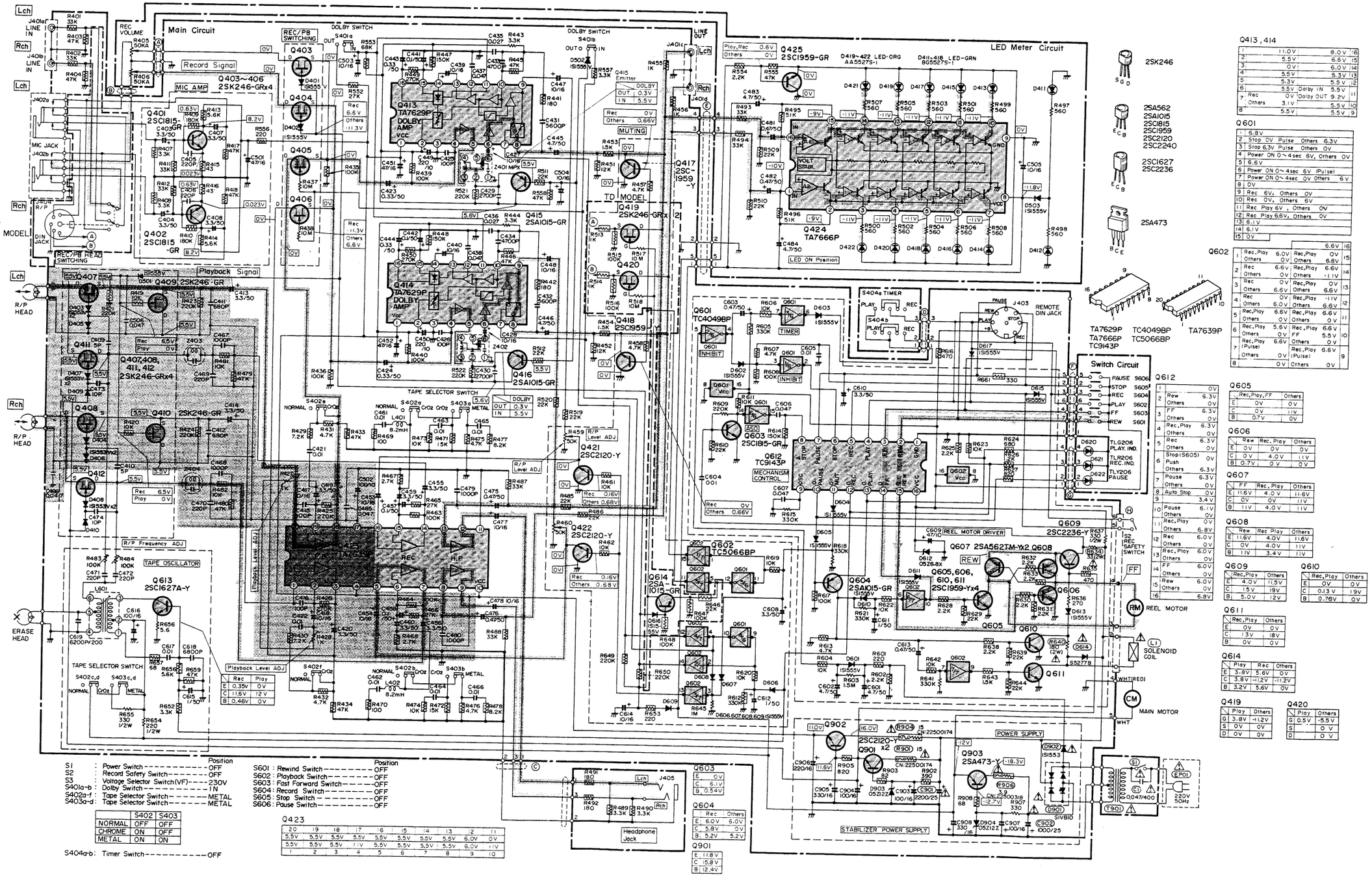
## 2. SCHEMATIC DIAGRAM




**CAUTION:**
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

# TD

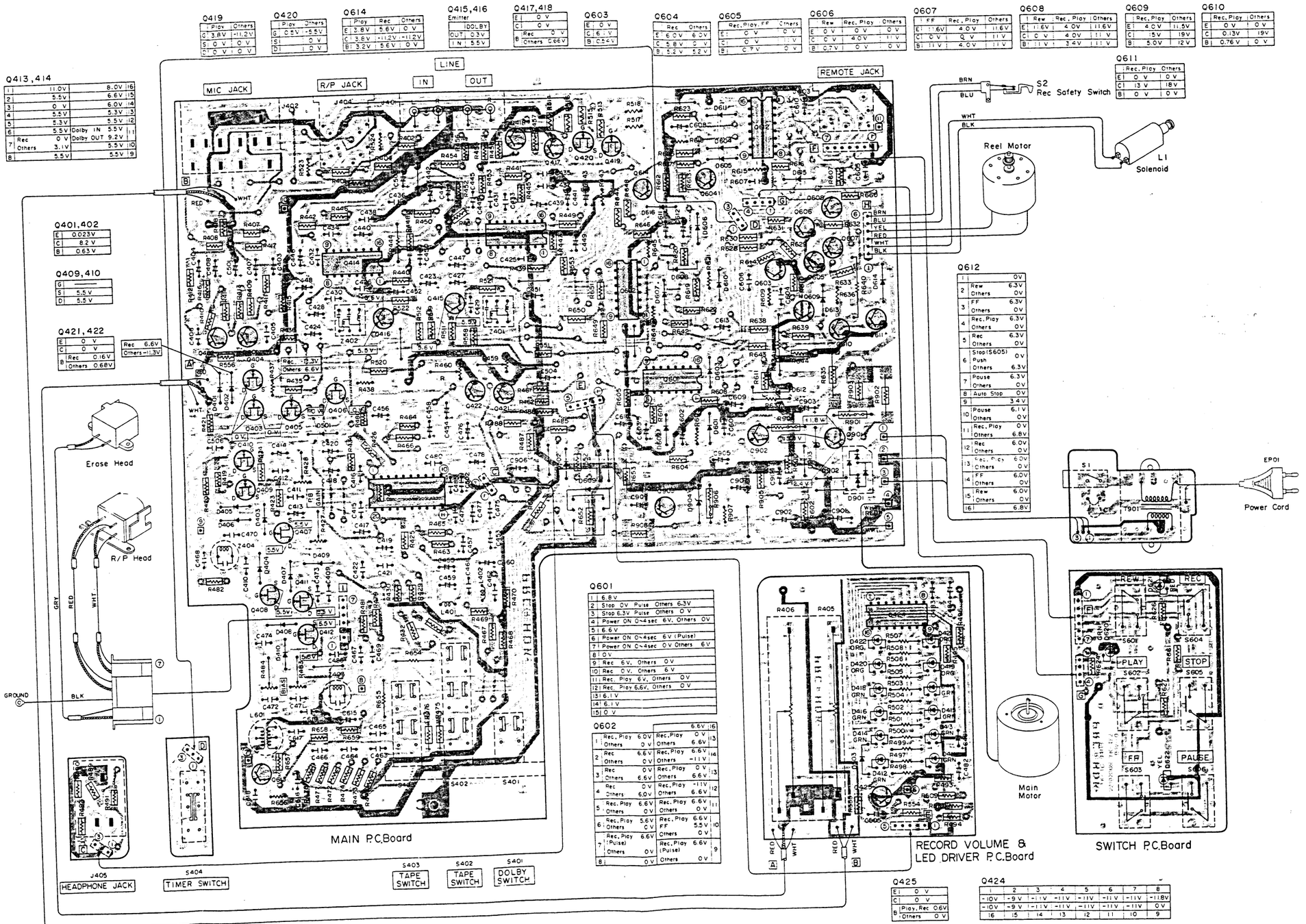
# 2. SCHEMATIC DIAGRAM




**CAUTION:**
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

TD

# 3. ELECTRICAL PARTS LOCATIONS




Q419

| | Play | Others |
|---|---|---|
| C | 3.8V | -11.2V |
| S | 0 V | 0 V |
| D | 0 V | 0 V |

Q420

| | Play | Others |
|---|---|---|
| G | 0 V | -5.5V |
| S | | 0 V |
| D | | 0 V |

Q614

| | Play | Rec | Others |
|---|---|---|---|
| E | 3.8V | 5.6V | 0 V |
| C | 3.8V | -11.2V | -11.2V |
| B | 3.2V | 5.6V | 0 V |

Q415,416 Emitter

| | DOLBY |
|---|---|
| OUT | 2.3V |
| IN | 5.5V |

Q417,418

| | |
|---|---|
| E | 0 V |
| C | 0 V |
| B | Rec 0 V<br>Others 0.66V |

Q603

| | |
|---|---|
| E | 0 V |
| C | 6.1 V |
| B | 0.54 V |

Q604

| | Rec | Others |
|---|---|---|
| E | 6.0V | 6.0V |
| C | 5.8V | 0 V |
| B | 5.2 V | 5.2 V |

Q605

| | Rec, Play, FF | Others |
|---|---|---|
| E | 0 V | 0 V |
| C | 0 V | 11 V |
| B | 0.7 V | 0 V |

Q606

| | Rew | Rec, Play | Others |
|---|---|---|---|
| E | 0 V | 0 V | 0 V |
| C | 0 V | 4.0V | 11 V |
| B | 0.7V | 0 V | 0 V |

Q607

| | FF | Rec, Play | Others |
|---|---|---|---|
| E | 11.6V | 4.0 V | 11.6V |
| C | 0 V | 0 V | 11 V |
| B | 11 V | 4.0 V | 11 V |

Q608

| | Rew | Rec, Play | Others |
|---|---|---|---|
| E | 11.6V | 4.0V | 11.6V |
| C | 0 V | 4.0V | 11 V |
| B | 11 V | 3.4V | 11 V |

Q609

| | Rec, Play | Others |
|---|---|---|
| E | 4.0V | 11.5V |
| C | 5V | 19V |
| B | 5.0V | 12V |

Q610

| | Rec, Play | Others |
|---|---|---|
| E | 0 V | 0 V |
| C | 0.13V | 19V |
| B | 0.76 V | 0 V |

Q611

| | Rec, Play | Others |
|---|---|---|
| E | 0 V | 0 V |
| C | 13 V | 18V |
| B | 0 V | 0 V |

Q413,414

| | | |
|---|---|---|
| 1 | 11.0V | 8.0V 16 |
| 2 | 5.5V | 6.6V 15 |
| 3 | 0 V | 6.0V 14 |
| 4 | 5.5V | 5.5V 13 |
| 5 | 5.3V | 5.5V 12 |
| 6 | 5.5V | Dolby IN 5.5V 11 |
| 7 | Rec 0 V<br>Others 3.1V | Dolby OUT 9.2V<br>5.5V 10 |
| 8 | 5.5V | 5.5V 9 |

Q401,402

| | |
|---|---|
| E | 0.025V |
| C | 8.2 V |
| B | 0.63 V |

Q409,410

| | |
|---|---|
| G | |
| S | 5.5 V |
| D | 5.5 V |

Q421,422

| | |
|---|---|
| E | 0 V |
| C | 0 V |
| B | Rec 0.16V<br>Others 0.68V |

Rec 6.6V
Others 11.3V

Q612

| | | |
|---|---|---|
| 1 | | 0V |
| 2 | Rew<br>Others | 6.3V<br>0V |
| 3 | FF<br>Others | 6.3V<br>0V |
| 4 | Rec, Play<br>Others | 6.3V<br>0V |
| 5 | Rec<br>Others | 6.3V<br>0V |
| 6 | Stop(S605)<br>Push<br>Others | 0V<br>6.3V |
| 7 | Pause<br>Others | 6.3V<br>0V |
| 8 | Auto Stop | 0V |
| 9 | | 3.4V |
| 10 | Pause<br>Others | 6.1V<br>0V |
| 11 | Rec, Play<br>Others | 0V<br>6.8V |
| 12 | Rec<br>Others | 6.0V<br>0V |
| 13 | Rec, Play<br>Others | 6.0V<br>0V |
| 14 | FF<br>Others | 6.0V<br>0V |
| 15 | Rew<br>Others | 6.0V<br>0V |
| 16 | | 6.8V |

Q601

| | |
|---|---|
| 1 | 6.8V |
| 2 | Stop 0V Pulse Others 6.3V |
| 3 | Stop 6.3V Pulse Others 0 V |
| 4 | Power ON 0~4sec 6V, Others 0V |
| 5 | 6.6 V |
| 6 | Power ON 0~4sec 6V (Pulse) |
| 7 | Power ON 0~4sec 0V Others 6V |
| 8 | 0 V |
| 9 | Rec 6V, Others 0 V |
| 10 | Rec 0 V, Others 6 V |
| 11 | Rec, Play 6V, Others 0V |
| 12 | Rec, Play 6.6V, Others 0 V |
| 13 | 6.1 V |
| 14 | 6.1 V |
| 15 | 0 V |

Q602

| | | | | |
|---|---|---|---|---|
| 1 | Rec, Play 6.0V<br>Others 0 V | | 6.6V<br>Rec, Play 0 V<br>Others 6.6V | 16<br>13 |
| 2 | Rec 6.6V<br>Others 0V | | Rec, Play 6.6V<br>Others -11 V | 14 |
| 3 | Rec 0V<br>Others 6.6V | | Rec, Play 0 V<br>Others 6.6 V | 13 |
| 4 | Rec 0 V<br>Others 6.0V | | Rec, Play -11V<br>Others 6.6 V | 12 |
| 5 | Rec, Play 6.6V<br>Others 0 V | | Rec, Play 6.6 V<br>Others 0 V | 11 |
| 6 | Rec, Play 5.6V<br>Others 0 V | | Rec, Play 6.6 V<br>FF 5.5V<br>Others 0 V | 10 |
| 7 | Rec, Play 6.6V<br>(Pulse)<br>Others 0V | | Rec, Play 6.6V<br>(Pulse)<br>Others 0 V | 9 |
| 8 | 0 V | | | |

Q613

| | Rec | Play |
|---|---|---|
| E | 0.35V | 0 V |
| C | 11.6V | 12 V |
| B | 0.46V | 0 V |

Q423

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| 5.5V | 5.5V | 5.5V | 11V | 5.5V | 5.5V | 5.5V | 5.5V | 6.0V | 11V |
| 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 6.0V | 0 V |
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 |

Q425

| | |
|---|---|
| E | 0 V |
| C | 0 V |
| B | Play, Rec 0.6V<br>Others 0 V |

Q424

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| -10V | -9 V | -11V | -11V | -11V | -11V | -11V | -11.8V |
| -10V | -9 V | -11V | -11V | -11V | -11V | -11V | 0 V |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

**CAUTION:**
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.



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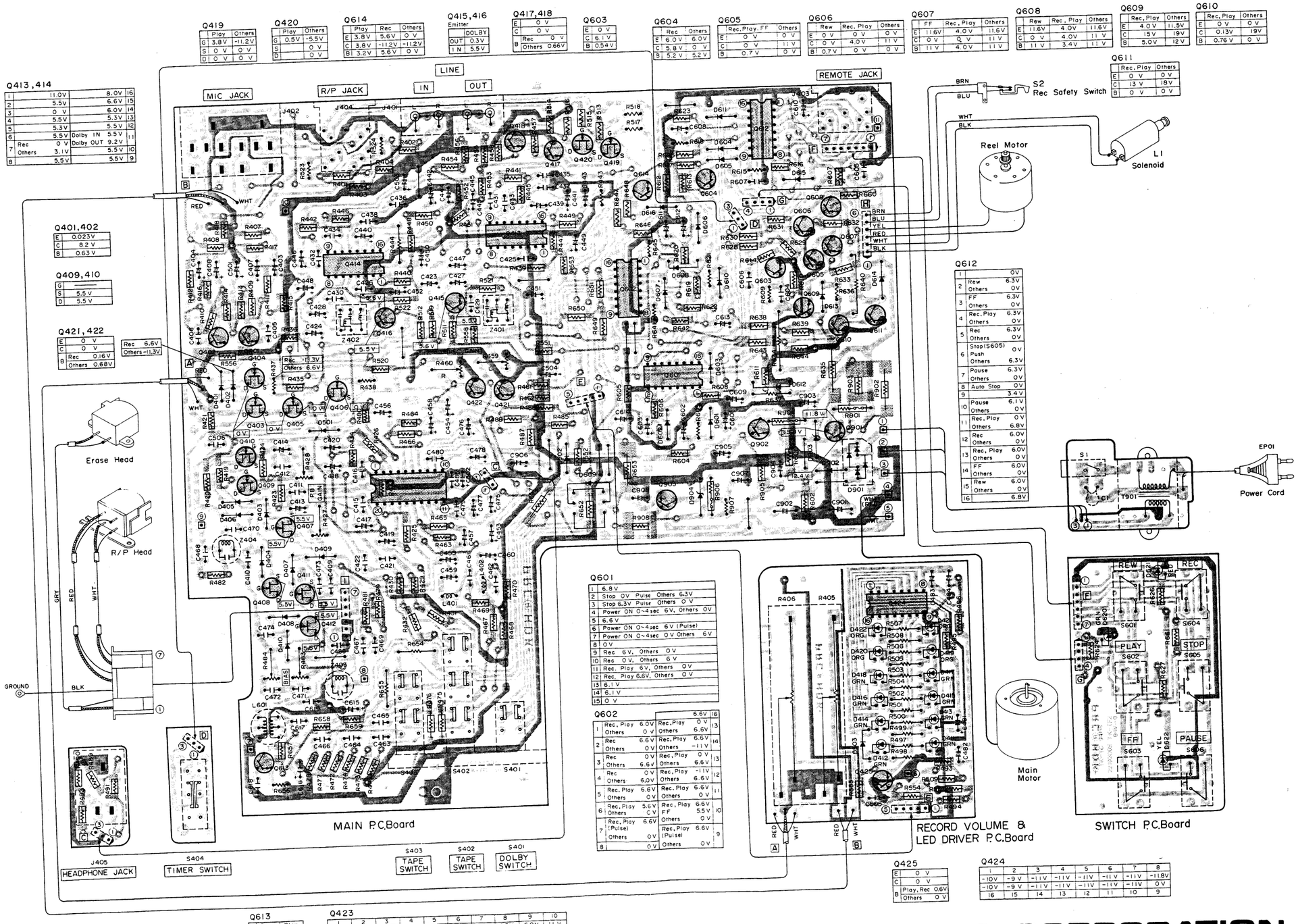
# 3. ELECTRICAL PARTS LOCATIONS




Q419

| | Play | Others |
|---|---|---|
| G | 3.8V | -11.2V |
| S | 0 V | 0 V |
| D | 0 V | 0 V |

Q420

| | Play | Others |
|---|---|---|
| G | 0.5V | -5.5V |
| S | | 0 V |
| D | | 0 V |

Q614

| | Play | Rec | Others |
|---|---|---|---|
| E | 3.8V | 5.6V | 0 V |
| C | 3.8V | -11.2V | -11.2V |
| B | 3.2V | 5.6V | 0 V |

Q415,416 (Emitter)

| | DOLBY |
|---|---|
| OUT | 0.3V |
| IN | 5.5V |

Q417,418

| | |
|---|---|
| E | 0 V |
| C | 0 V |
| B | Rec 0 V<br>Others 0.66V |

Q603

| | |
|---|---|
| E | 0 V |
| C | 6.1 V |
| B | 0.54V |

Q604

| | Rec | Others |
|---|---|---|
| E | 6.0V | 6.0V |
| C | 5.8V | 0 V |
| B | 5.2V | 5.2V |

Q605

| | Rec, Play, FF | Others |
|---|---|---|
| E | 0 V | 0 V |
| C | 0 V | 11 V |
| B | 0.7 V | 0 V |

Q606

| | Rew | Rec, Play | Others |
|---|---|---|---|
| E | 0 V | 0 V | 0 V |
| C | 0 V | 4.0V | 11 V |
| B | 0.7V | 0 V | 0 V |

Q607

| | FF | Rec, Play | Others |
|---|---|---|---|
| E | 11.6V | 4.0 V | 11.6V |
| C | 0 V | 0 V | 11 V |
| B | 11 V | 4.0V | 11 V |

Q608

| | Rew | Rec, Play | Others |
|---|---|---|---|
| E | 11.6V | 4.0V | 11.6V |
| C | 0 V | 4.0V | 11 V |
| B | 11 V | 3.4V | 11 V |

Q609

| | Rec, Play | Others |
|---|---|---|
| E | 4.0 V | 11.5V |
| C | 15V | 19V |
| B | 5.0V | 12V |

Q610

| | Rec, Play | Others |
|---|---|---|
| E | 0 V | 0 V |
| C | 0.13V | 19V |
| B | 0.76 V | 0 V |

Q611

| | Rec, Play | Others |
|---|---|---|
| E | 0 V | 0 V |
| C | 13 V | 18V |
| B | 0 V | 0 V |

Q413,414

| | | | |
|---|---|---|---|
| 1 | | 11.0V | 16 |
| 2 | | 5.5V | 15 |
| 3 | | 0 V | 14 |
| 4 | | 5.5V | 13 |
| 5 | | 5.3V | 12 |
| 6 | | 5.5V Dolby IN 5.5V | 11 |
| 7 | Rec 0 V<br>Others 3.1V | Dolby OUT 9.2V | 10 |
| 8 | | 5.5V | 9 |

Q401,402

| | |
|---|---|
| E | 0.023V |
| C | 8.2 V |
| B | 0.63 V |

Q409,410

| | |
|---|---|
| G | |
| S | 5.5 V |
| D | 5.5 V |

Q421,422

| | |
|---|---|
| E | 0 V |
| C | 0 V |
| B | Rec 0.16V<br>Others 0.68V |

Rec 6.6V
Others -11.3V

Q612

| | | |
|---|---|---|
| 1 | | 0V |
| 2 | Rew<br>Others | 6.3V<br>0V |
| 3 | FF<br>Others | 6.3V<br>0V |
| 4 | Rec, Play<br>Others | 6.3V<br>0V |
| 5 | Rec<br>Others | 6.3V<br>0V |
| 6 | Stop(S605)<br>Push<br>Others | 0V<br>6.3V |
| 7 | Pause<br>Others | 6.3V<br>0V |
| 8 | Auto Stop | 0V |
| 9 | | 3.4V |
| 10 | Pause<br>Others | 6.1V<br>0V |
| 11 | Rec, Play<br>Others | 0V<br>6.8V |
| 12 | Rec<br>Others | 6.0V<br>0V |
| 13 | Rec, Play<br>Others | 6.0V<br>0V |
| 14 | FF<br>Others | 6.0V<br>0V |
| 15 | Rew<br>Others | 6.0V<br>0V |
| 16 | | 6.8V |

Q601

| | |
|---|---|
| 1 | 6.8 V |
| 2 | Stop 0V Pulse Others 6.3V |
| 3 | Stop 6.3V Pulse Others 0 V |
| 4 | Power ON 0~4sec 6V, Others 0V |
| 5 | 6.6 V |
| 6 | Power ON 0~4sec 6 V (Pulse) |
| 7 | Power ON 0~4sec 0 V Others 6 V |
| 8 | 0 V |
| 9 | Rec 6 V, Others 0 V |
| 10 | Rec 0 V, Others 6 V |
| 11 | Rec, Play 6 V, Others 0 V |
| 12 | Rec, Play 6.6V, Others 0 V |
| 13 | 6.1 V |
| 14 | 6.1 V |
| 15 | 0 V |

Q602

| | | | |
|---|---|---|---|
| | | | 6.6V 16 |
| 1 | Rec, Play 6.0V<br>Others 0 V | Rec, Play 0 V<br>Others 6.6V | 13 |
| 2 | Rec 6.6 V<br>Others 0 V | Rec, Play 6.6V<br>Others -11 V | 14 |
| 3 | Rec 0 V<br>Others 6.6V | Rec, Play 0 V<br>Others 6.6 V | 13 |
| 4 | Rec 0 V<br>Others 6.0V | Rec, Play -11V<br>Others 6.6 V | 12 |
| 5 | Rec, Play 6.6V<br>Others 0 V | Rec, Play 6.6V<br>Others 0 V | 11 |
| 6 | Rec, Play 5.6V<br>Others 0 V | Rec, Play 6.6V<br>FF 5.5V<br>Others 0 V | 10 |
| 7 | Rec, Play 6.6V<br>(Pulse)<br>Others 0V | Rec, Play 6.6V<br>(Pulse)<br>Others 0 V | 9 |
| 8 | 0 V | | |

Q425

| | |
|---|---|
| E | 0 V |
| C | 0 V |
| B | Play, Rec 0.6V<br>Others 0 V |

Q424

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| -10V | -9 V | -11V | -11V | -11V | -11V | -11V | -11.8V |
| -10V | -9 V | -11V | -11V | -11V | -11V | -11V | 0V |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

Q613

| | Rec | Play |
|---|---|---|
| E | 0.35V | 0 V |
| C | 11.6V | 12 V |
| B | 0.46V | 0 V |

Q423

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| 5.5 V | 5.5V | 5.5V | 11 V | 5.5V | 5.5 V | 5.5 V | 5.5V | 6.0V | 11 V |
| 5.5 V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5V | 5.5 V | 5.5V | 6.0V | 0 V |
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 |

**CAUTION:**
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.



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